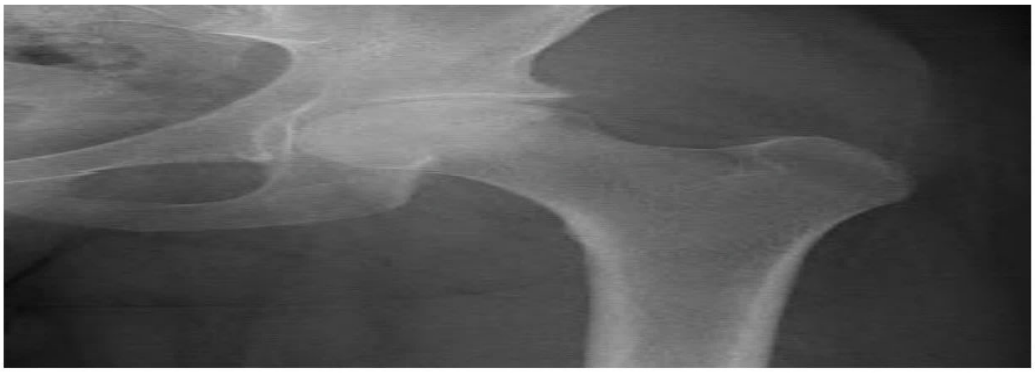
Question 1 of 122

Question Difficulty: **Easy**

35 years Mrs. X is complaining of gradually increasing pain in her right hip which is worse on exercising and weight bearing. She is recently had chemotherapy with Denosumab for thyroid cancer.

Examination shows painful passive movement of the hip is in all directions, especially internal rotation. X-ray shows of the femur is shown in the image. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	6 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	12.0-16.0 g/dL
ESR	50 1st hour	<10 1st hour



What is the most likely diagnosis?

- ○ Osteoarthritis
- ● Trochanteric bursitis
- ○ RA
- ○ Avascular necrosis
- ○ Metastatic deposits

Description

Avascular necrosis (AVN) is defined as cellular death of bone components due to interruption of the blood supply. It involves the epiphysis of long bones, such as the femoral and humeral heads and the femoral condyles. It is commonly caused by chronic corticosteroid use.

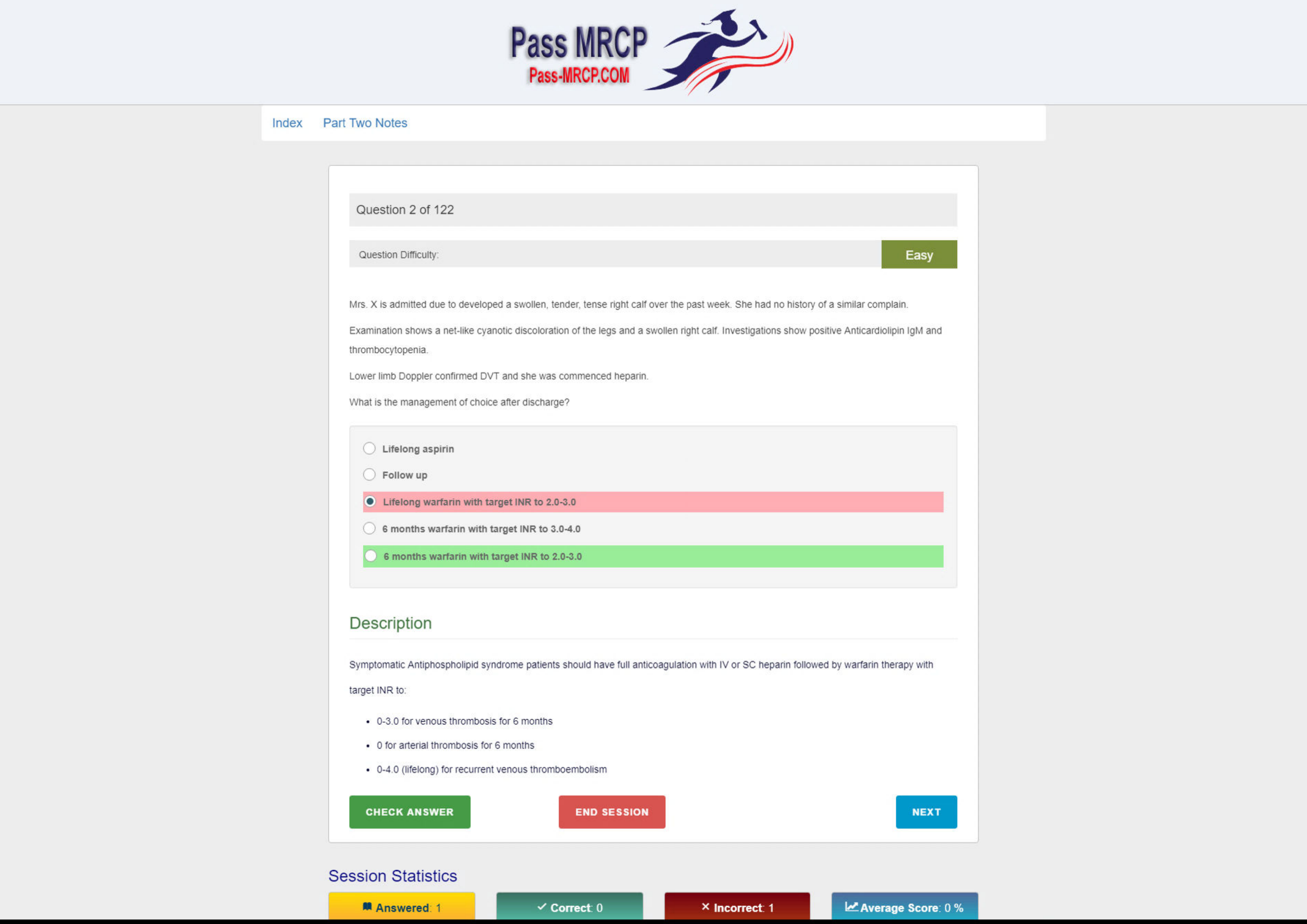
It is manifested by tenderness around the affected bone with restricted both active and passive joint movements.

X-Ray shows bone deformities including flattening of joint, subchondral radiolucent lines (crescent sign) and collapse of the femoral head.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 0 ✓ **Correct**: 0 ✕ **Incorrect**: 0 **Average Score**: 0 %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Part Two Notes

Question 2 of 122

Question Difficulty: **Easy**

Mrs. X is admitted due to developed a swollen, tender, tense right calf over the past week. She had no history of a similar complain.

Examination shows a net-like cyanotic discoloration of the legs and a swollen right calf. Investigations show positive Anticardiolipin IgM and thrombocytopenia.

Lower limb Doppler confirmed DVT and she was commenced heparin.

What is the management of choice after discharge?

○ **Lifelong aspirin**

○ **Follow up**

● **Lifelong warfarin with target INR to 2.0-3.0**

○ **6 months warfarin with target INR to 3.0-4.0**

○ **6 months warfarin with target INR to 2.0-3.0**

Description

Symptomatic Antiphospholipid syndrome patients should have full anticoagulation with IV or SC heparin followed by warfarin therapy with target INR to:

- 0-3.0 for venous thrombosis for 6 months
- 0 for arterial thrombosis for 6 months
- 0-4.0 (lifelong) for recurrent venous thromboembolism

CHECK ANSWER
END SESSION
NEXT

Session Statistics

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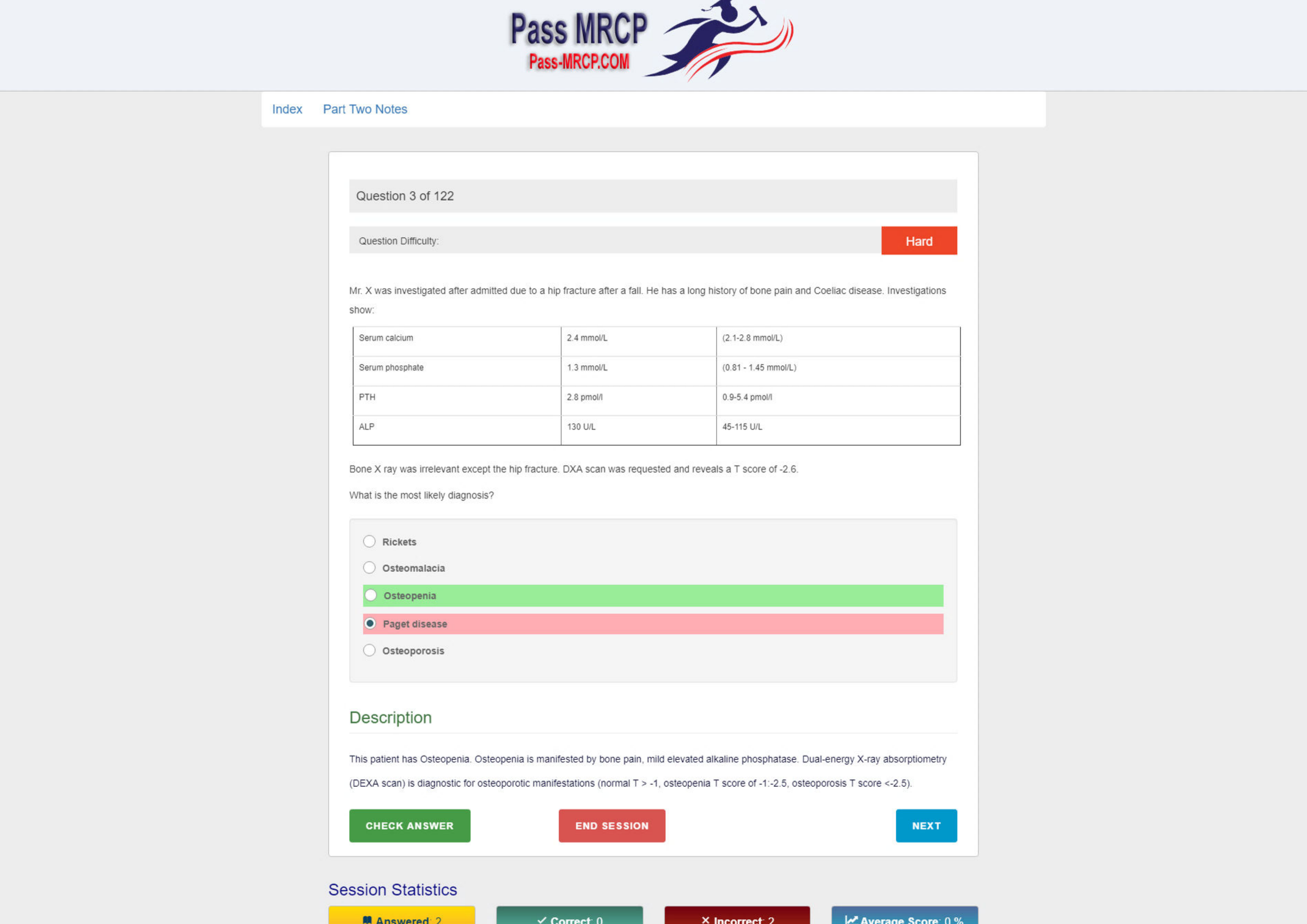


Question 3 of 122

Question Difficulty: **Hard**

Mr. X was investigated after admitted due to a hip fracture after a fall. He has a long history of bone pain and Coeliac disease. Investigations show:

Serum calcium	2.4 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	1.3 mmol/L	(0.81 - 1.45 mmol/L)
PTH	2.8 pmol/l	0.9-5.4 pmol/l
ALP	130 U/L	45-115 U/L

Bone X ray was irrelevant except the hip fracture. DXA scan was requested and reveals a T score of -2.6.

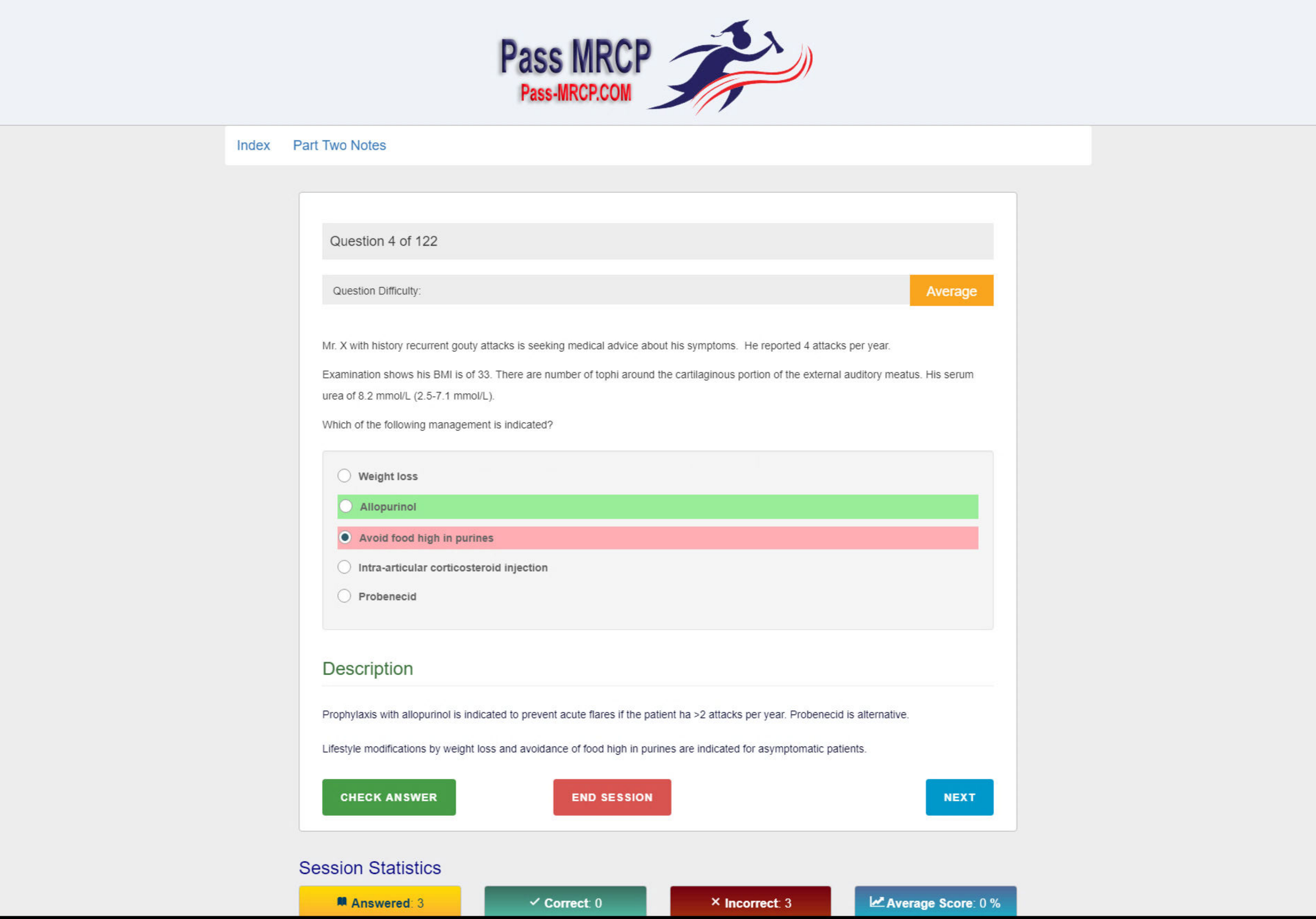
What is the most likely diagnosis?

- ○ **Rickets**
- ○ **Osteomalacia**
- ○ **Osteopenia**
- ● **Paget disease**
- ○ **Osteoporosis**

Description

This patient has Osteopenia. Osteopenia is manifested by bone pain, mild elevated alkaline phosphatase. Dual-energy X-ray absorptiometry (DEXA scan) is diagnostic for osteoporotic manifestations (normal T > -1, osteopenia T score of -1:-2.5, osteoporosis T score <-2.5).

Session Statistics



Question 4 of 122

Question Difficulty: Average

Mr. X with history recurrent gouty attacks is seeking medical advice about his symptoms. He reported 4 attacks per year.

Examination shows his BMI is of 33. There are number of tophi around the cartilaginous portion of the external auditory meatus. His serum urea of 8.2 mmol/L (2.5-7.1 mmol/L).

Which of the following management is indicated?

- ○ Weight loss
- ○ Allopurinol
- ● Avoid food high in purines
- ○ Intra-articular corticosteroid injection
- ○ Probenecid

Description

Prophylaxis with allopurinol is indicated to prevent acute flares if the patient ha >2 attacks per year. Probenecid is alternative.

Lifestyle modifications by weight loss and avoidance of food high in purines are indicated for asymptomatic patients.

Session Statistics

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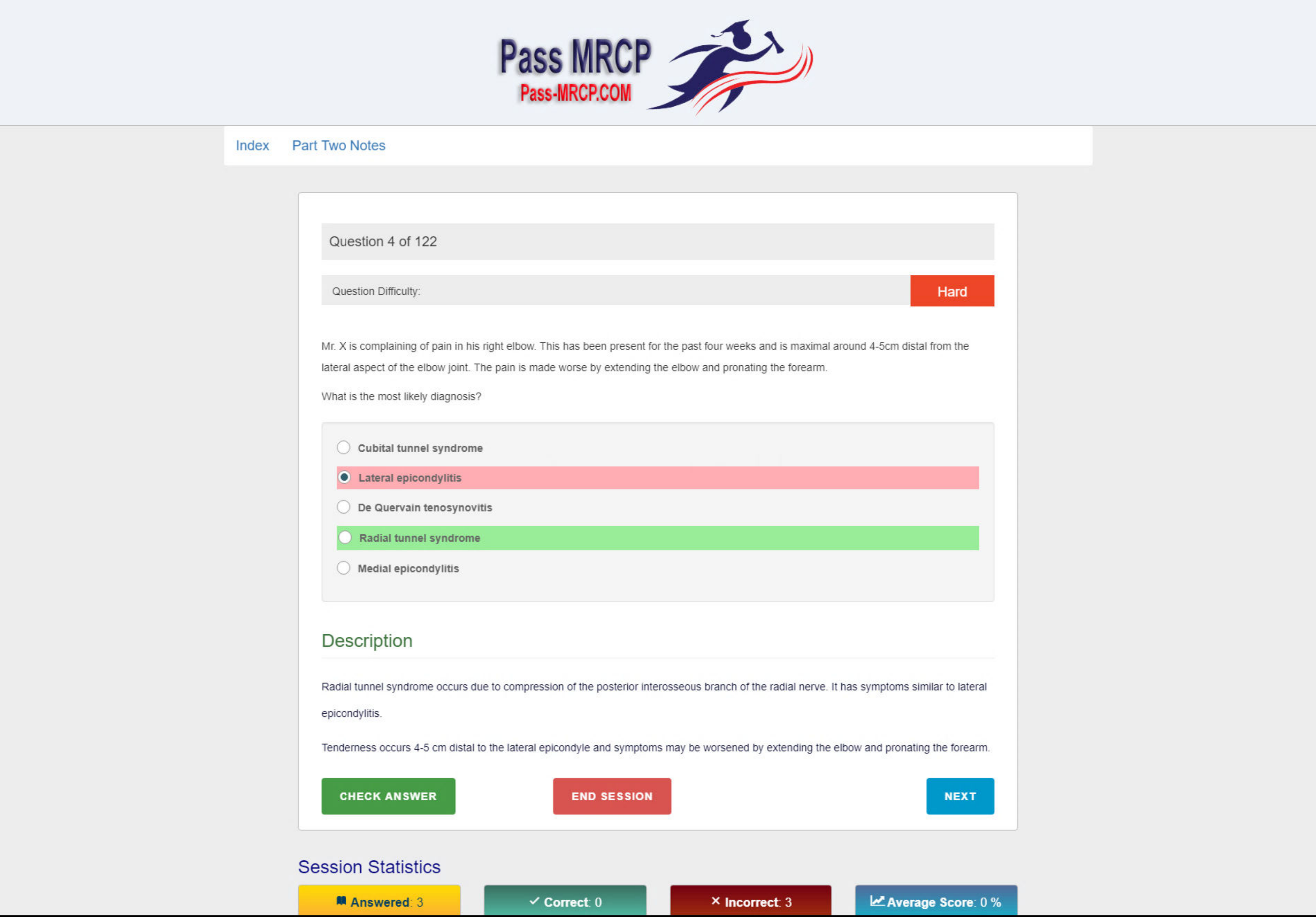

Question 4 of 122

Question Difficulty: Hard

Mr. X is complaining of pain in his right elbow. This has been present for the past four weeks and is maximal around 4-5cm distal from the lateral aspect of the elbow joint. The pain is made worse by extending the elbow and pronating the forearm.

What is the most likely diagnosis?

- ○ Cubital tunnel syndrome
- ● Lateral epicondylitis
- ○ De Quervain tenosynovitis
- ○ Radial tunnel syndrome
- ○ Medial epicondylitis

Description

Radial tunnel syndrome occurs due to compression of the posterior interosseous branch of the radial nerve. It has symptoms similar to lateral epicondylitis.

Tenderness occurs 4-5 cm distal to the lateral epicondyle and symptoms may be worsened by extending the elbow and pronating the forearm.

Session Statistics

Answered: 3
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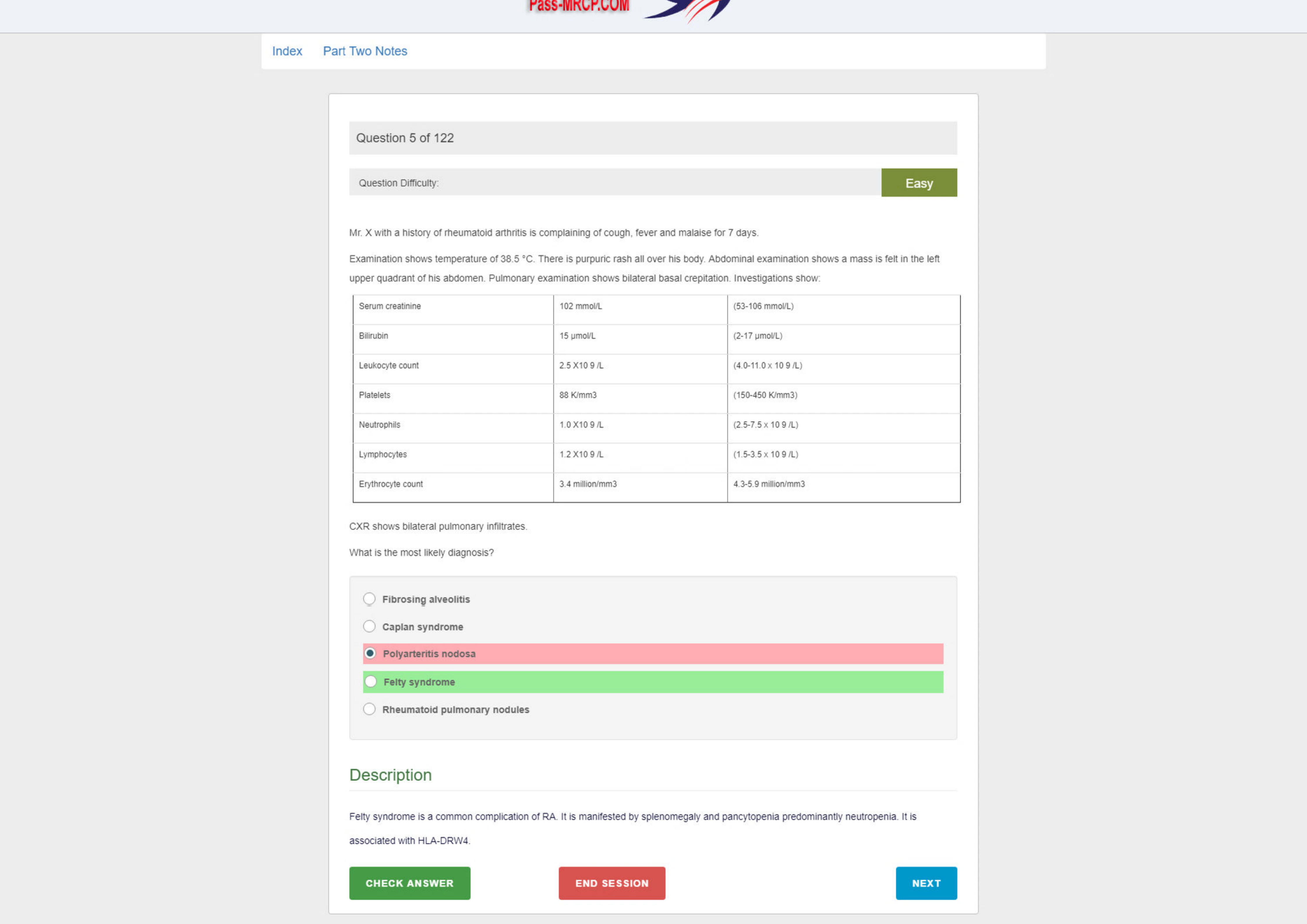


Question 5 of 122

Question Difficulty: **Easy**

Mr. X with a history of rheumatoid arthritis is complaining of cough, fever and malaise for 7 days.

Examination shows temperature of 38.5 °C. There is purpuric rash all over his body. Abdominal examination shows a mass is felt in the left upper quadrant of his abdomen. Pulmonary examination shows bilateral basal crepitation. Investigations show:

Serum creatinine	102 mmol/L	(53-106 mmol/L)
Bilirubin	15 µmol/L	(2-17 µmol/L)
Leukocyte count	2.5 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	88 K/mm3	(150-450 K/mm3)
Neutrophils	1.0 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	1.2 X10 9 /L	(1.5-3.5 x 10 9 /L)
Erythrocyte count	3.4 million/mm3	4.3-5.9 million/mm3

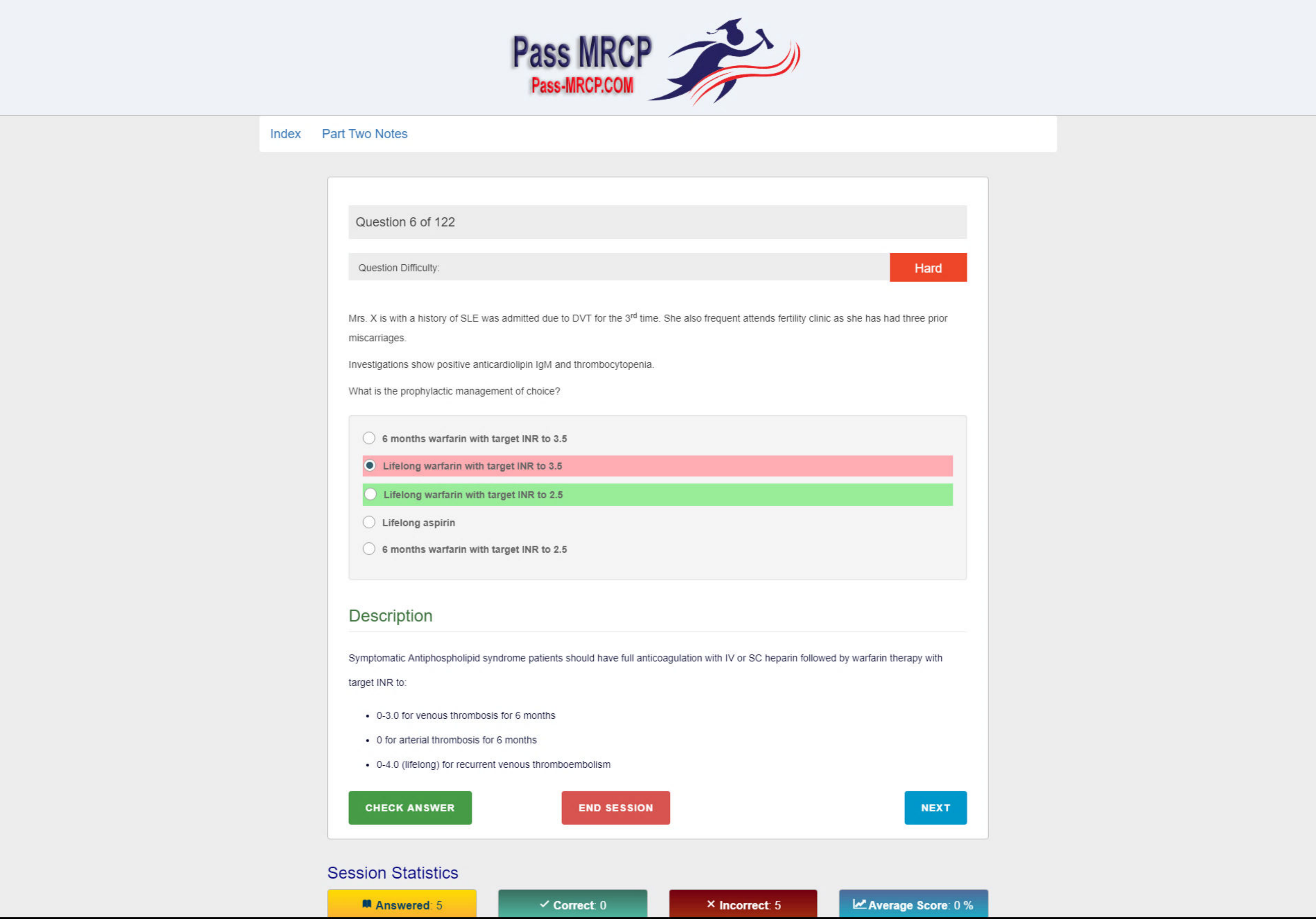
CXR shows bilateral pulmonary infiltrates.

What is the most likely diagnosis?

- ○ **Fibrosing alveolitis**
- ○ **Caplan syndrome**
- ● **Polyarteritis nodosa**
- ○ **Felty syndrome**
- ○ **Rheumatoid pulmonary nodules**

Description

Felty syndrome is a common complication of RA. It is manifested by splenomegaly and pancytopenia predominantly neutropenia. It is associated with HLA-DRW4.



Question 6 of 122

Question Difficulty: **Hard**

Mrs. X is with a history of SLE was admitted due to DVT for the 3rd time. She also frequent attends fertility clinic as she has had three prior miscarriages.

Investigations show positive anticardiolipin IgM and thrombocytopenia.

What is the prophylactic management of choice?

○ **6 months warfarin with target INR to 3.5**
● **Lifelong warfarin with target INR to 3.5**
○ **Lifelong warfarin with target INR to 2.5**
○ **Lifelong aspirin**
○ **6 months warfarin with target INR to 2.5**

Description

Symptomatic Antiphospholipid syndrome patients should have full anticoagulation with IV or SC heparin followed by warfarin therapy with target INR to:

- 0-3.0 for venous thrombosis for 6 months
- 0 for arterial thrombosis for 6 months
- 0-4.0 (lifelong) for recurrent venous thromboembolism

Session Statistics

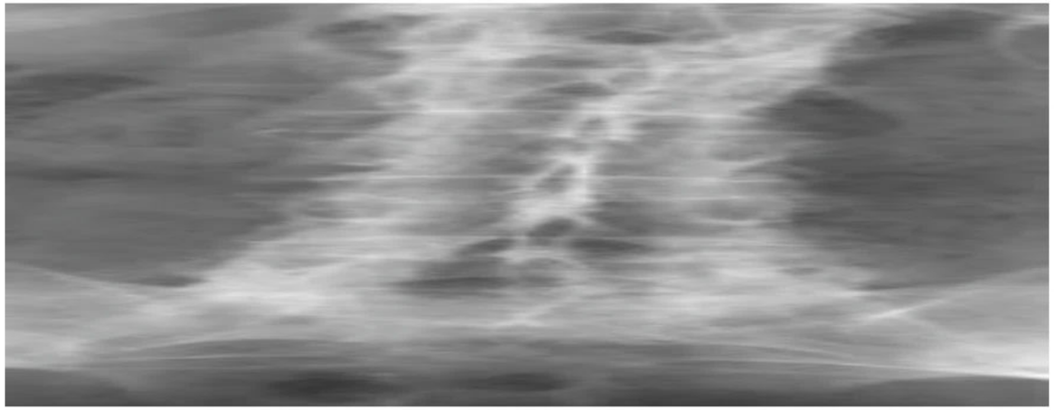
Answered: 5 | **Correct**: 0 | **Incorrect**: 5 | **Average Score**: 0 %

Question 7 of 122

Question Difficulty: **Easy**

Mr. X is complaining of insidious onset of low back pain that progressed over the past 3 months. He reported the symptoms worse in the morning or with inactivity and improvement with exercise.

A spinal x ray is shown in the image.



Which of the following would be expected to appear in chest x ray?

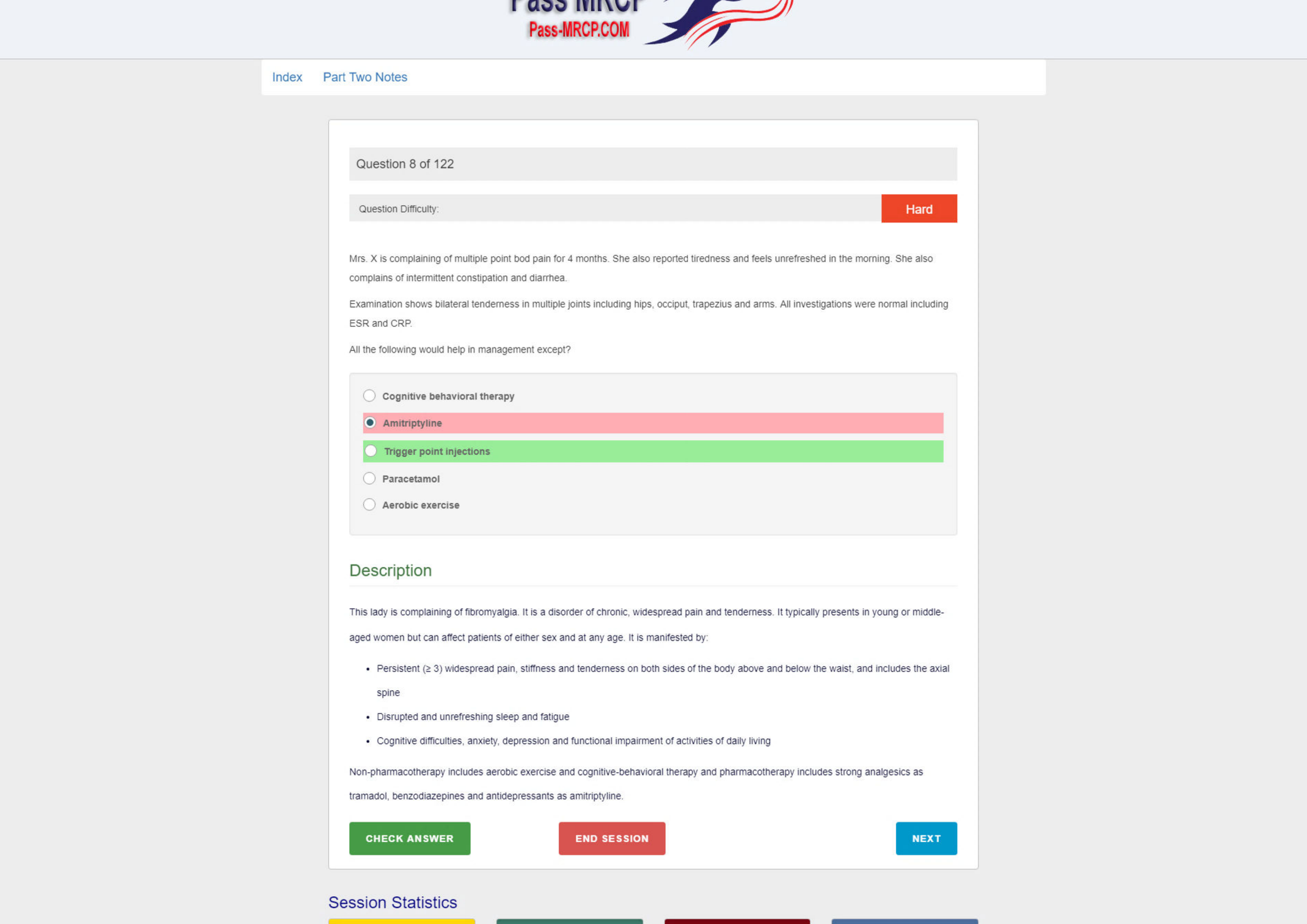
○ **Atelectasis**
● **Apical lung fibrosis**
○ **Pleural effusion**
○ **Basal lung fibrosis**
○ **Cardiomegaly**

Description

This patient is complaining of ankylosing spondylitis. The X ray shows Squaring of the vertebral bodies (Tramline appearance). Ankylosing spondylitis is manifested by:

- Insidious onset of low back pain (the most common symptom)
- Presence of symptoms for more than 3 months
- Symptoms worse in the morning or with inactivity and improvement with exercise (inflammatory arthritis)
- Reduced lateral and forward (Schober test) flexion of the spine (< 15 cm)

Apical lung fibrosis is a common extra-articular complication of ankylosing spondylitis.



Question 8 of 122

Question Difficulty: Hard

Mrs. X is complaining of multiple point bod pain for 4 months. She also reported tiredness and feels unrefreshed in the morning. She also complains of intermittent constipation and diarrhea.

Examination shows bilateral tenderness in multiple joints including hips, occiput, trapezius and arms. All investigations were normal including ESR and CRP.

All the following would help in management except?

○ **Cognitive behavioral therapy**
● **Amitriptyline**
○ **Trigger point injections**
○ **Paracetamol**
○ **Aerobic exercise**

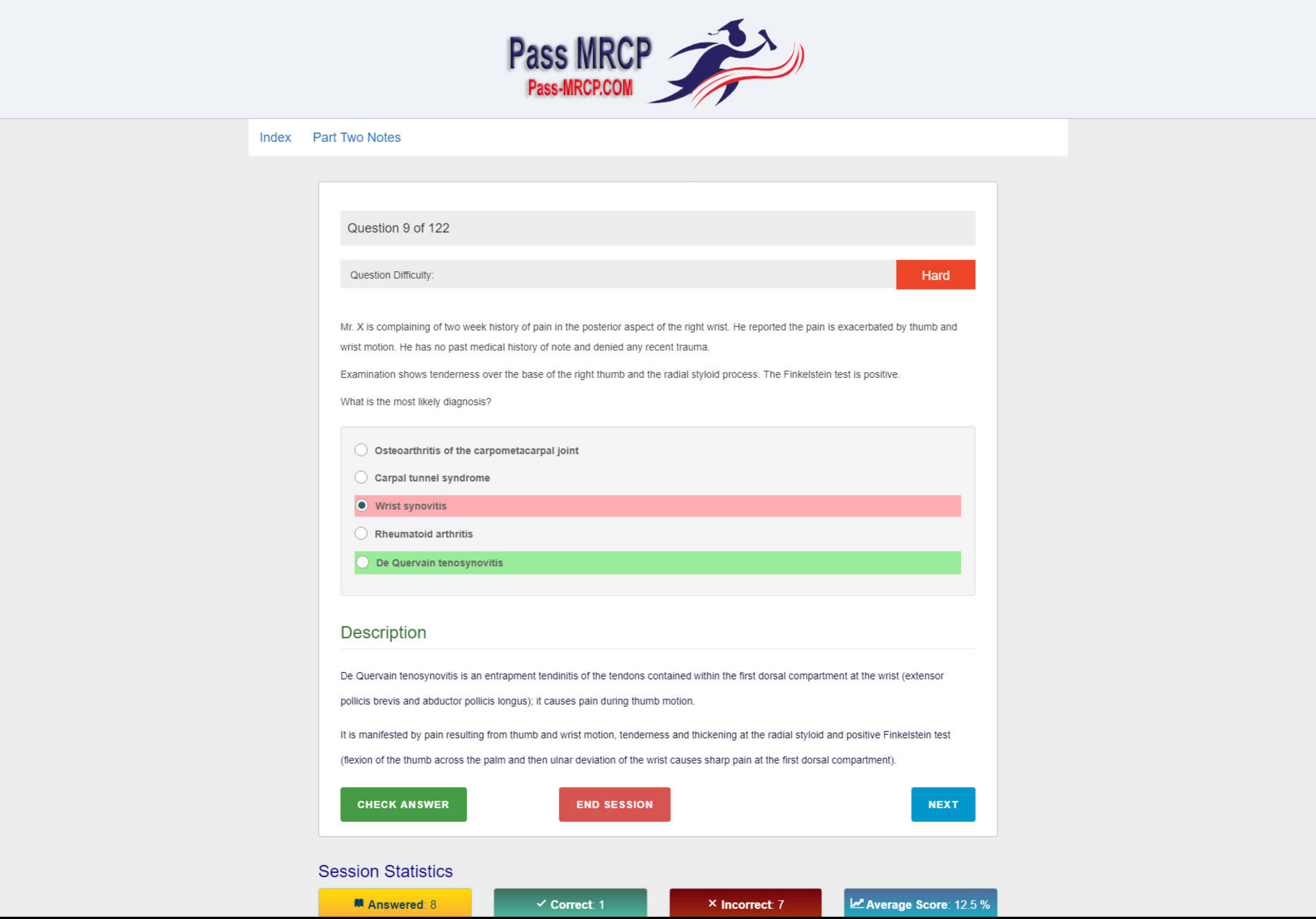
Description

This lady is complaining of fibromyalgia. It is a disorder of chronic, widespread pain and tenderness. It typically presents in young or middle-aged women but can affect patients of either sex and at any age. It is manifested by:

- Persistent (≥ 3) widespread pain, stiffness and tenderness on both sides of the body above and below the waist, and includes the axial spine
- Disrupted and unrefreshing sleep and fatigue
- Cognitive difficulties, anxiety, depression and functional impairment of activities of daily living

Non-pharmacotherapy includes aerobic exercise and cognitive-behavioral therapy and pharmacotherapy includes strong analgesics as tramadol, benzodiazepines and antidepressants as amitriptyline.

Session Statistics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Question 9 of 122

Question Difficulty: Hard

Mr. X is complaining of two week history of pain in the posterior aspect of the right wrist. He reported the pain is exacerbated by thumb and wrist motion. He has no past medical history of note and denied any recent trauma.

Examination shows tenderness over the base of the right thumb and the radial styloid process. The Finkelstein test is positive.

What is the most likely diagnosis?

- ○ **Osteoarthritis of the carpometacarpal joint**
- ○ **Carpal tunnel syndrome**
- ● **Wrist synovitis**
- ○ **Rheumatoid arthritis**
- ○ **De Quervain tenosynovitis**

Description

De Quervain tenosynovitis is an entrapment tendinitis of the tendons contained within the first dorsal compartment at the wrist (extensor pollicis brevis and abductor pollicis longus); it causes pain during thumb motion.

It is manifested by pain resulting from thumb and wrist motion, tenderness and thickening at the radial styloid and positive Finkelstein test (flexion of the thumb across the palm and then ulnar deviation of the wrist causes sharp pain at the first dorsal compartment).

CHECK ANSWER
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Session Statistics

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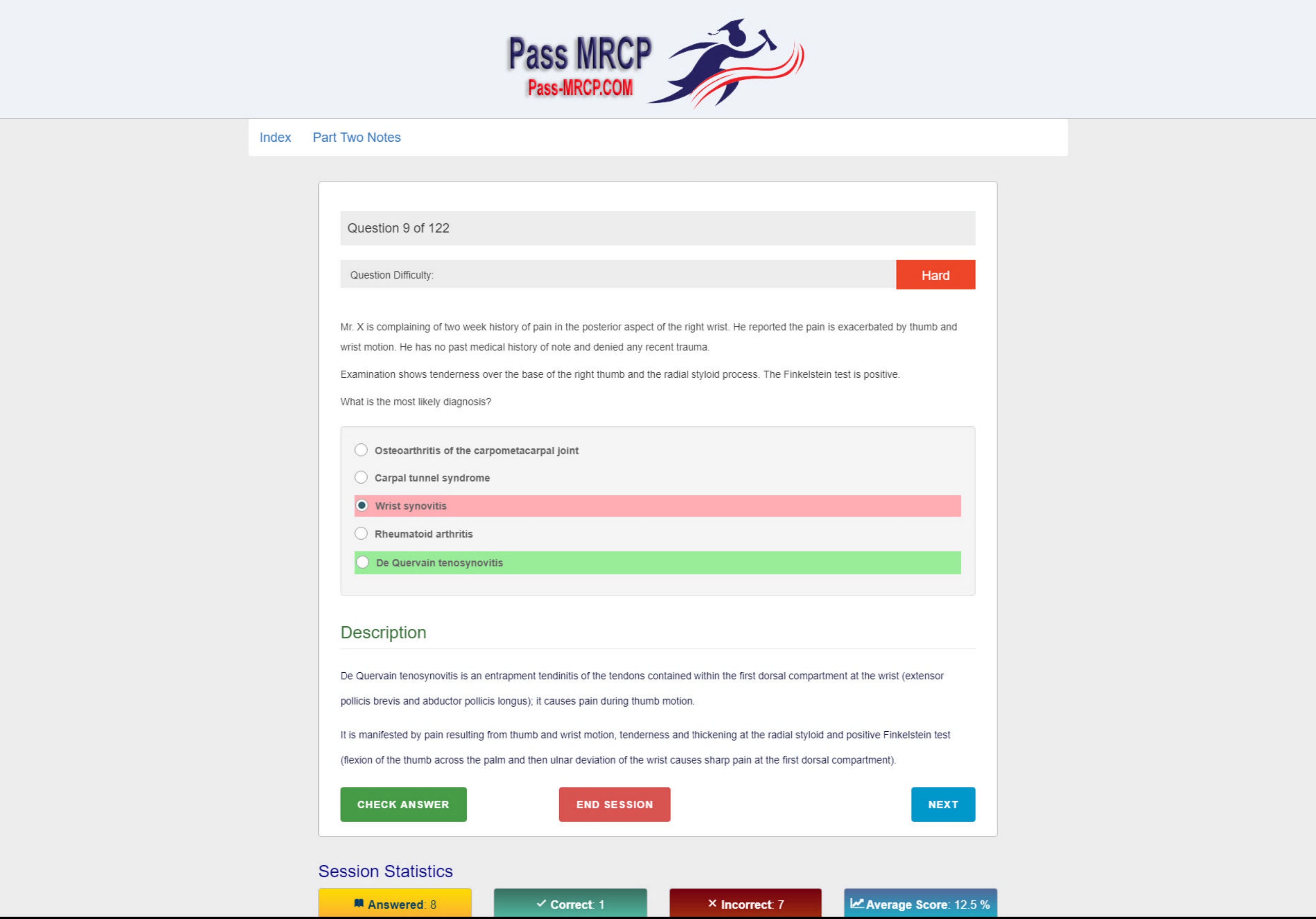

Question 9 of 122

Question Difficulty: **Hard**

Mr. X is complaining of two week history of pain in the posterior aspect of the right wrist. He reported the pain is exacerbated by thumb and wrist motion. He has no past medical history of note and denied any recent trauma.

Examination shows tenderness over the base of the right thumb and the radial styloid process. The Finkelstein test is positive.

What is the most likely diagnosis?

- ○ **Osteoarthritis of the carpometacarpal joint**
- ○ **Carpal tunnel syndrome**
- ● **Wrist synovitis** 🟥
- ○ **Rheumatoid arthritis**
- ○ **De Quervain tenosynovitis** 🟩

Description

De Quervain tenosynovitis is an entrapment tendinitis of the tendons contained within the first dorsal compartment at the wrist (extensor pollicis brevis and abductor pollicis longus); it causes pain during thumb motion.

It is manifested by pain resulting from thumb and wrist motion, tenderness and thickening at the radial styloid and positive Finkelstein test (flexion of the thumb across the palm and then ulnar deviation of the wrist causes sharp pain at the first dorsal compartment).

Session Statistics

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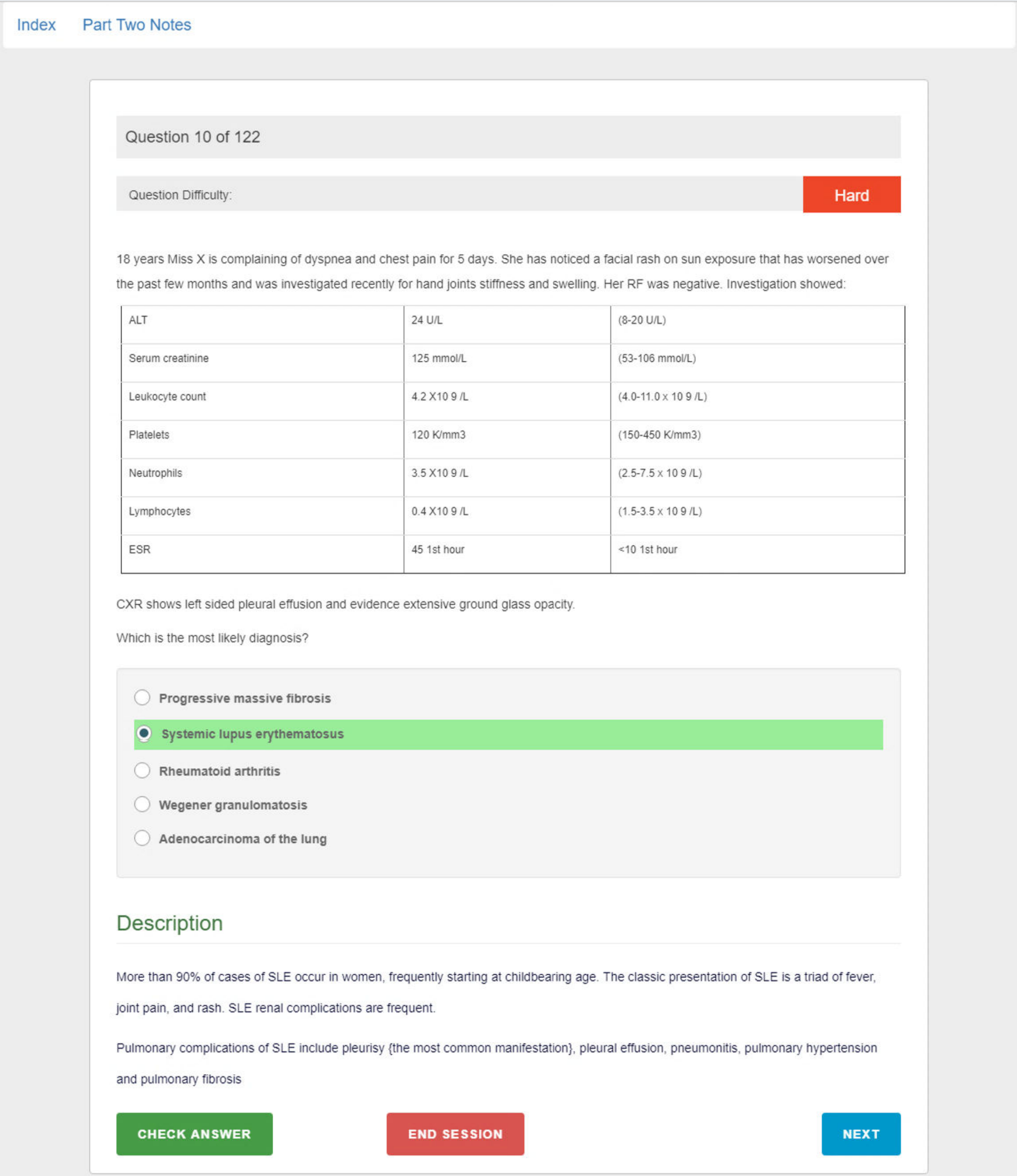


Question 10 of 122

Question Difficulty: **Hard**

18 years Miss X is complaining of dyspnea and chest pain for 5 days. She has noticed a facial rash on sun exposure that has worsened over the past few months and was investigated recently for hand joints stiffness and swelling. Her RF was negative. Investigation showed:

ALT	24 U/L	(8-20 U/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
Leukocyte count	4.2 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	120 K/mm3	(150-450 K/mm3)
Neutrophils	3.5 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.4 X10 9 /L	(1.5-3.5 x 10 9 /L)
ESR	45 1st hour	<10 1st hour

CXR shows left sided pleural effusion and evidence extensive ground glass opacity.

Which is the most likely diagnosis?

- ○ **Progressive massive fibrosis**
- ● **Systemic lupus erythematosus**
- ○ **Rheumatoid arthritis**
- ○ **Wegener granulomatosis**
- ○ **Adenocarcinoma of the lung**

Description

More than 90% of cases of SLE occur in women, frequently starting at childbearing age. The classic presentation of SLE is a triad of fever, joint pain, and rash. SLE renal complications are frequent.

Pulmonary complications of SLE include pleurisy {the most common manifestation}, pleural effusion, pneumonitis, pulmonary hypertension and pulmonary fibrosis

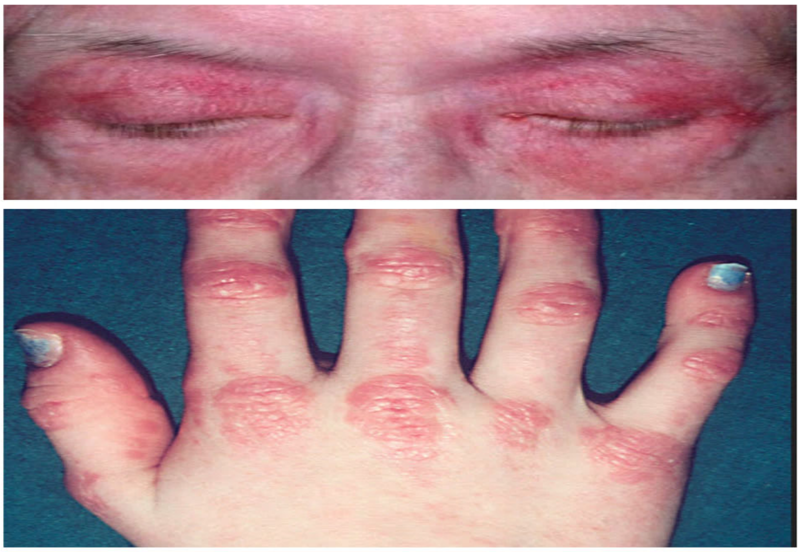
Question 11 of 122

Question Difficulty: **Hard**

Mr. X is complaining of weight loss, hemoptysis and progressive muscle weakness for 3 months. He reported he has been unable to swallow solid food recently.

Examination shows skin signs shown in the images. There is wasting of the proximal muscles of the shoulder and pelvic girdles. CXR shows irregular central cavitating left lung mass. Investigations show:

Hemoglobin	12 g/dL	(13.5-17.5 g/dL)
Serum creatinine	98 mmol/L	(53-106 mmol/L)
Serum creatine kinase	260 U/L	(25-90 U/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	266 K/mm3	(150-450 K/mm3)
ESR	110 1st hour	



What is the most likely diagnosis?

- ○ **Sjogren syndrome**
- ○ **Sarcoidosis**
- ○ **Systemic lupus erythematosus**
- ● **Dermatomyositis**
- ○ **Polymyositis**

Description

Dermatomyositis is an idiopathic inflammatory myopathy with characteristic cutaneous findings that affects also muscles and joints. It associated with increased risk of malignancy. It is manifested by:

- Pathognomonic cutaneous features as Heliotrope rash (blue-violet rash around the eyes) and Gottron papules (rough red papules over extensor surfaces of fingers)
- Photosensitive facial rash and macular rash over back and shoulder
- Proximal muscle weakness and tenderness
- Raynaud phenomenon
- Dysphagia and dysphonia
- Tachyarrhythmia
- Interstitial lung disease
- Elevated creatine kinase

Polymyositis is a variant of Dermatomyositis with the same features without skin manifestations. Anti-Jo antibody is specific for polymyositis.

CHECK ANSWER END SESSION NEXT

Session Statistics

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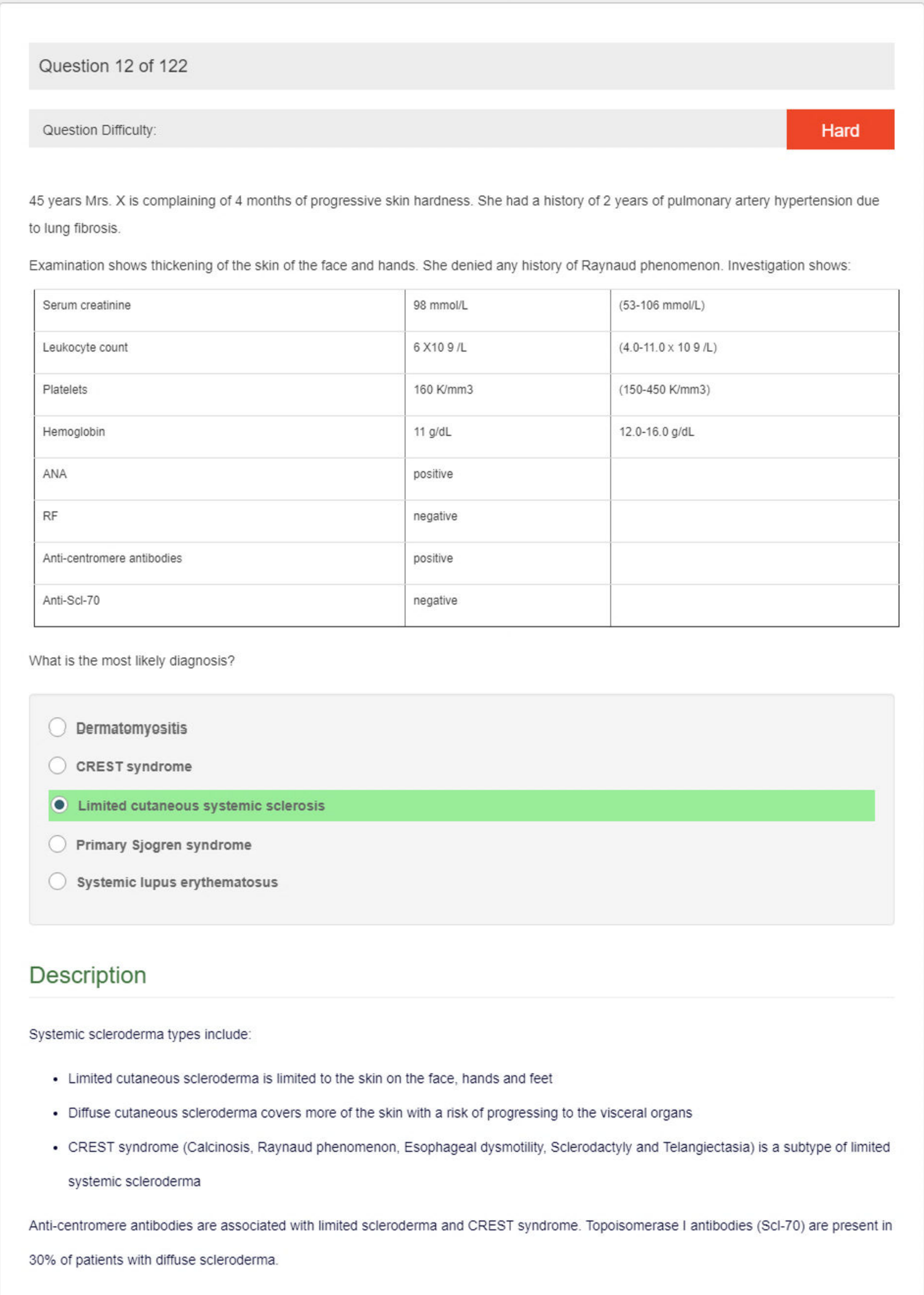


Question 12 of 122

Question Difficulty: **Hard**

45 years Mrs. X is complaining of 4 months of progressive skin hardness. She had a history of 2 years of pulmonary artery hypertension due to lung fibrosis.

Examination shows thickening of the skin of the face and hands. She denied any history of Raynaud phenomenon. Investigation shows:

Serum creatinine	98 mmol/L	(53-106 mmol/L)
Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	160 K/mm3	(150-450 K/mm3)
Hemoglobin	11 g/dL	12.0-16.0 g/dL
ANA	positive	
RF	negative	
Anti-centromere antibodies	positive	
Anti-Scl-70	negative	

What is the most likely diagnosis?

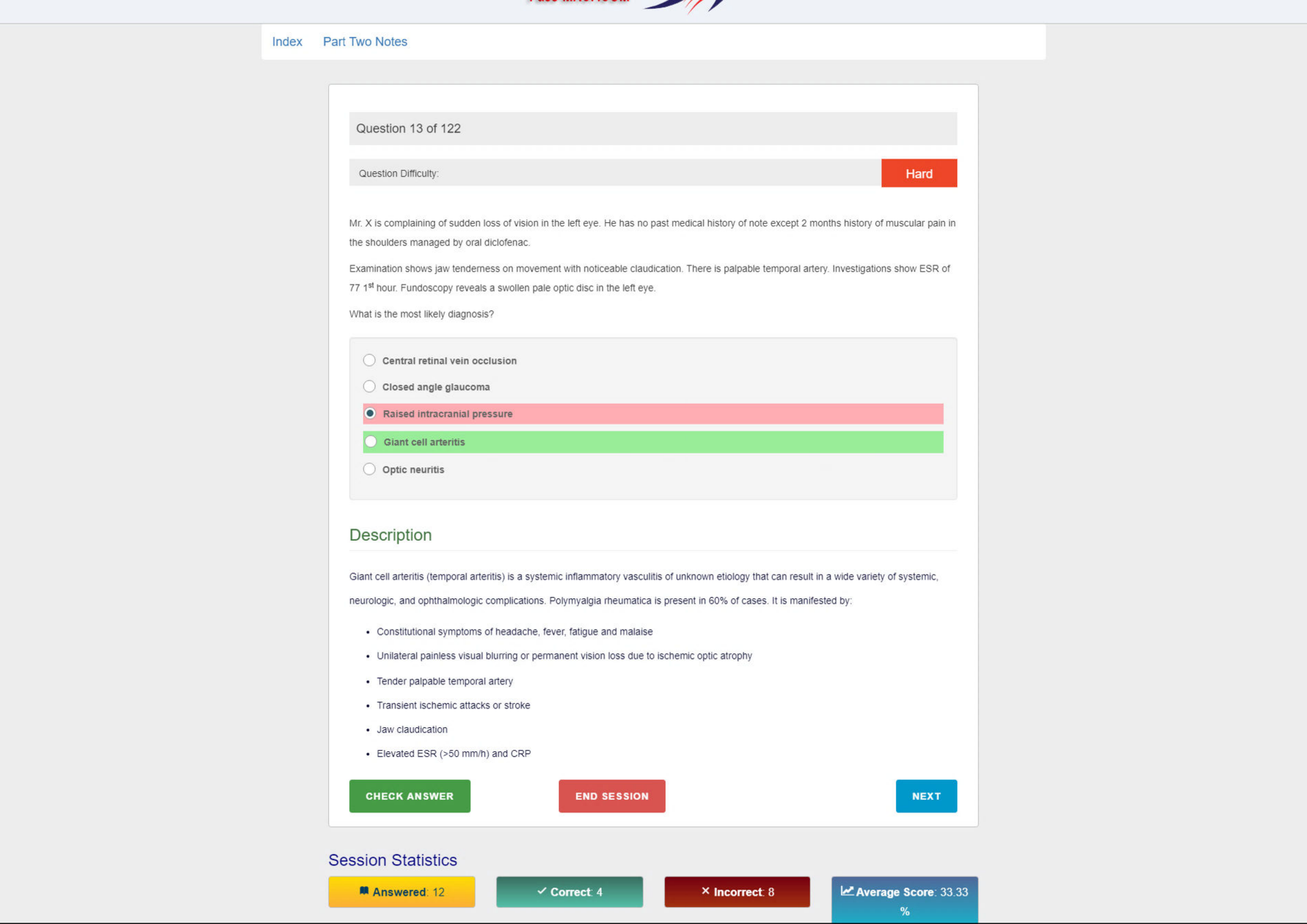
○ **Dermatomyositis**
○ **CREST syndrome**
● **Limited cutaneous systemic sclerosis**
○ **Primary Sjogren syndrome**
○ **Systemic lupus erythematosus**

Description

Systemic scleroderma types include:

- Limited cutaneous scleroderma is limited to the skin on the face, hands and feet
- Diffuse cutaneous scleroderma covers more of the skin with a risk of progressing to the visceral organs
- CREST syndrome (Calcinosis, Raynaud phenomenon, Esophageal dysmotility, Sclerodactyly and Telangiectasia) is a subtype of limited systemic scleroderma

Anti-centromere antibodies are associated with limited scleroderma and CREST syndrome. Topoisomerase I antibodies (Scl-70) are present in 30% of patients with diffuse scleroderma.



Question 13 of 122

Question Difficulty: Hard

Mr. X is complaining of sudden loss of vision in the left eye. He has no past medical history of note except 2 months history of muscular pain in the shoulders managed by oral diclofenac.

Examination shows jaw tenderness on movement with noticeable claudication. There is palpable temporal artery. Investigations show ESR of 77 1st hour. Fundoscopy reveals a swollen pale optic disc in the left eye.

What is the most likely diagnosis?

○ **Central retinal vein occlusion**
○ **Closed angle glaucoma**
● **Raised intracranial pressure**
○ **Giant cell arteritis**
○ **Optic neuritis**

Description

Giant cell arteritis (temporal arteritis) is a systemic inflammatory vasculitis of unknown etiology that can result in a wide variety of systemic, neurologic, and ophthalmologic complications. Polymyalgia rheumatica is present in 60% of cases. It is manifested by:

- Constitutional symptoms of headache, fever, fatigue and malaise
- Unilateral painless visual blurring or permanent vision loss due to ischemic optic atrophy
- Tender palpable temporal artery
- Transient ischemic attacks or stroke
- Jaw claudication
- Elevated ESR (>50 mm/h) and CRP

Session Statistics

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✕ **Incorrect**: 8
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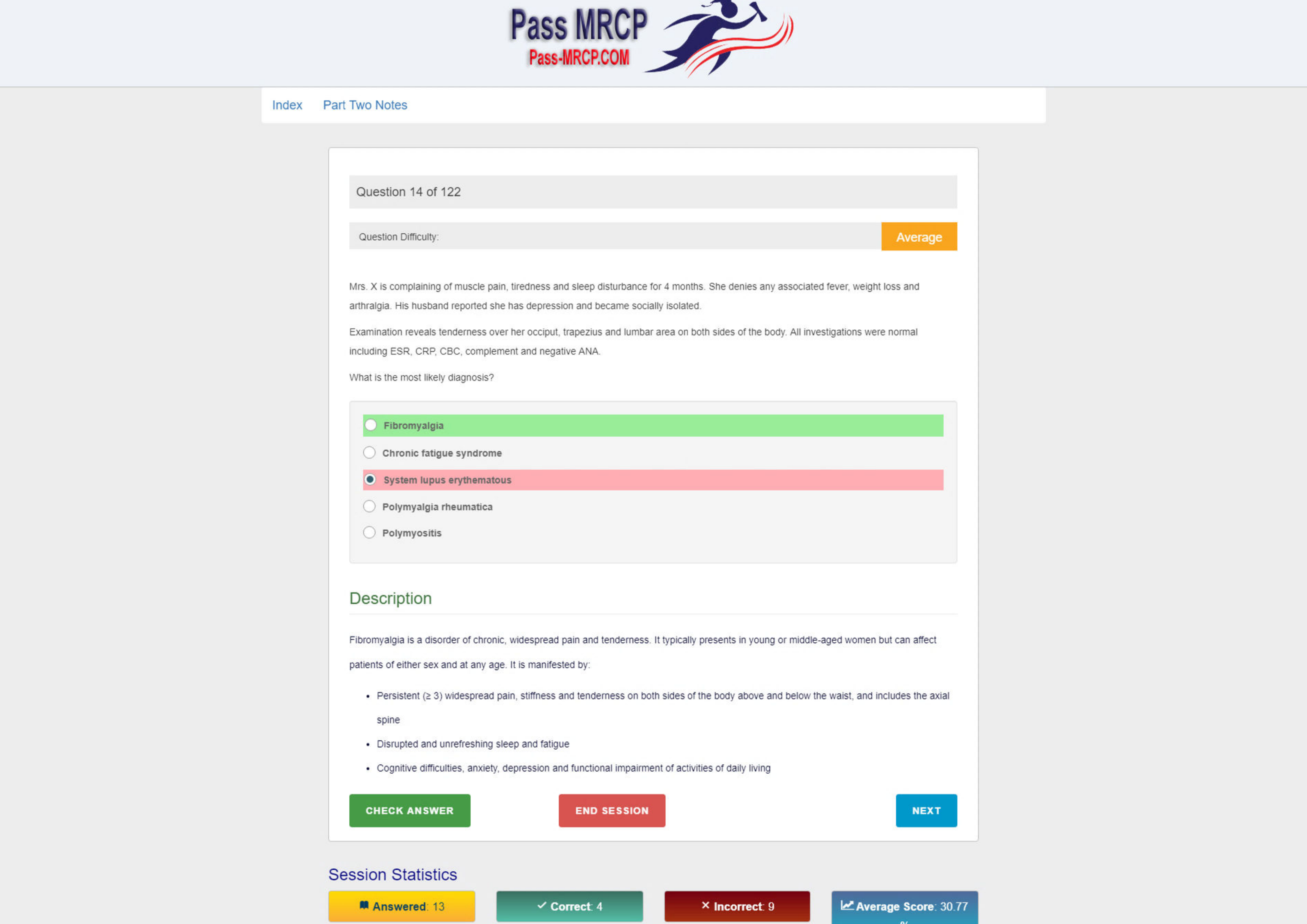

Question 14 of 122

Question Difficulty: Average

Mrs. X is complaining of muscle pain, tiredness and sleep disturbance for 4 months. She denies any associated fever, weight loss and arthralgia. His husband reported she has depression and became socially isolated.

Examination reveals tenderness over her occiput, trapezius and lumbar area on both sides of the body. All investigations were normal including ESR, CRP, CBC, complement and negative ANA.

What is the most likely diagnosis?

○ Fibromyalgia
○ Chronic fatigue syndrome
● System lupus erythematous
○ Polymyalgia rheumatica
○ Polymyositis

Description

Fibromyalgia is a disorder of chronic, widespread pain and tenderness. It typically presents in young or middle-aged women but can affect patients of either sex and at any age. It is manifested by:

- Persistent (≥ 3) widespread pain, stiffness and tenderness on both sides of the body above and below the waist, and includes the axial spine
- Disrupted and unrefreshing sleep and fatigue
- Cognitive difficulties, anxiety, depression and functional impairment of activities of daily living

Session Statistics

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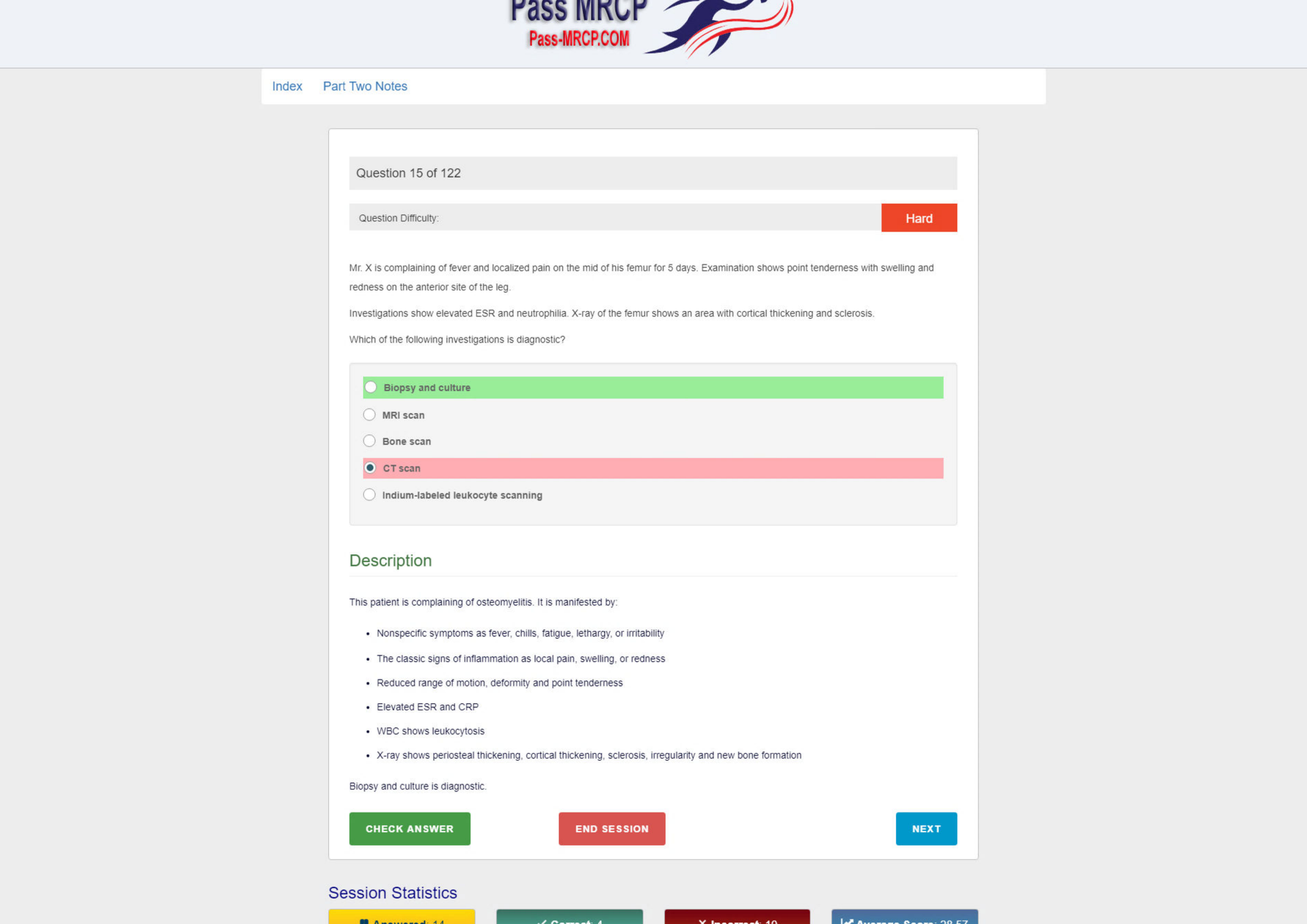


Question 15 of 122

Question Difficulty: Hard

Mr. X is complaining of fever and localized pain on the mid of his femur for 5 days. Examination shows point tenderness with swelling and redness on the anterior site of the leg.

Investigations show elevated ESR and neutrophilia. X-ray of the femur shows an area with cortical thickening and sclerosis.

Which of the following investigations is diagnostic?

○ **Biopsy and culture**
○ **MRI scan**
○ **Bone scan**
● **CT scan**
○ **Indium-labeled leukocyte scanning**

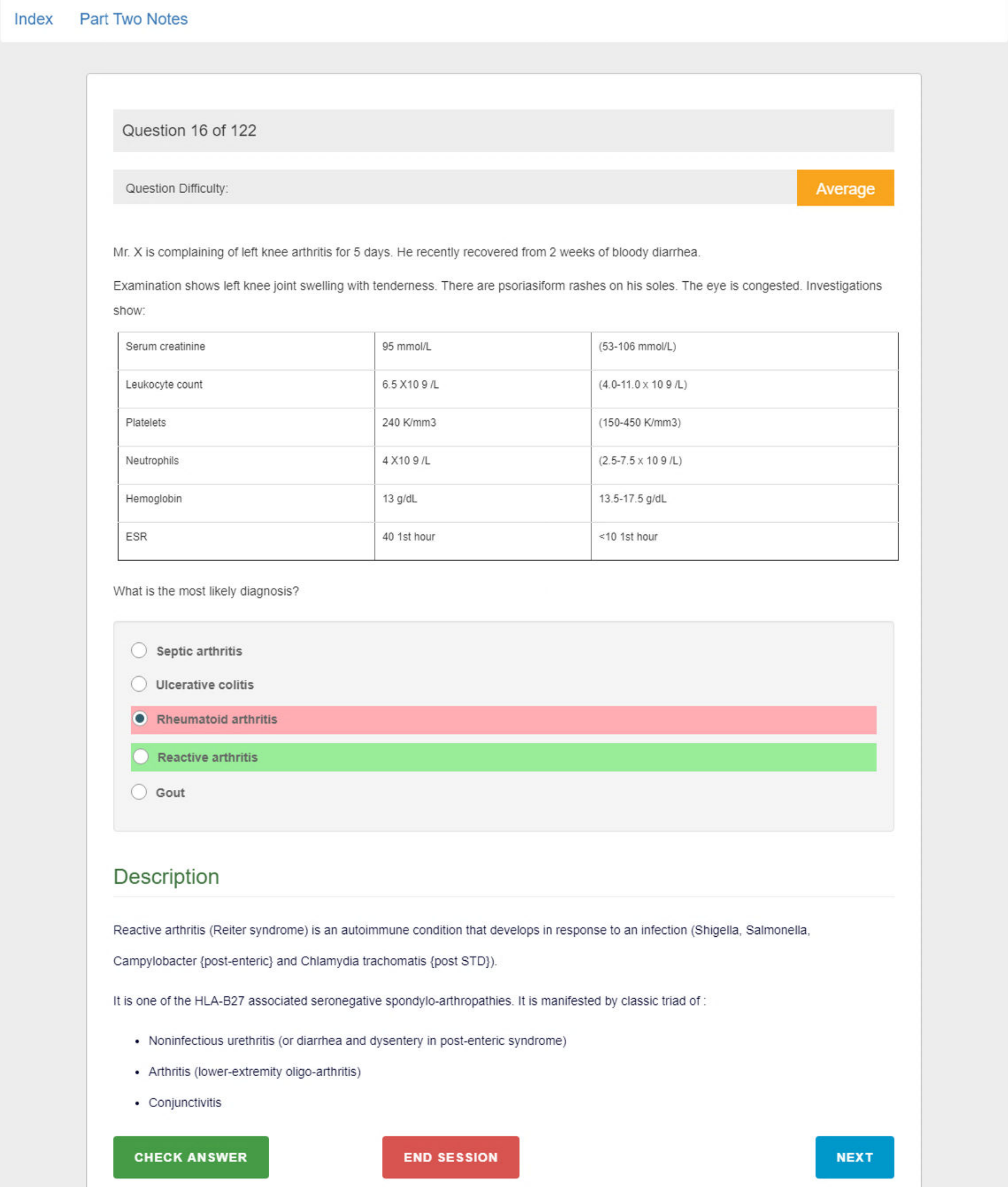
Description

This patient is complaining of osteomyelitis. It is manifested by:

- Nonspecific symptoms as fever, chills, fatigue, lethargy, or irritability
- The classic signs of inflammation as local pain, swelling, or redness
- Reduced range of motion, deformity and point tenderness
- Elevated ESR and CRP
- WBC shows leukocytosis
- X-ray shows periosteal thickening, cortical thickening, sclerosis, irregularity and new bone formation

Biopsy and culture is diagnostic.

Session Statistics



Question 16 of 122

Question Difficulty: Average

Mr. X is complaining of left knee arthritis for 5 days. He recently recovered from 2 weeks of bloody diarrhea.

Examination shows left knee joint swelling with tenderness. There are psoriasiform rashes on his soles. The eye is congested. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	6.5 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	240 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	40 1st hour	<10 1st hour

What is the most likely diagnosis?

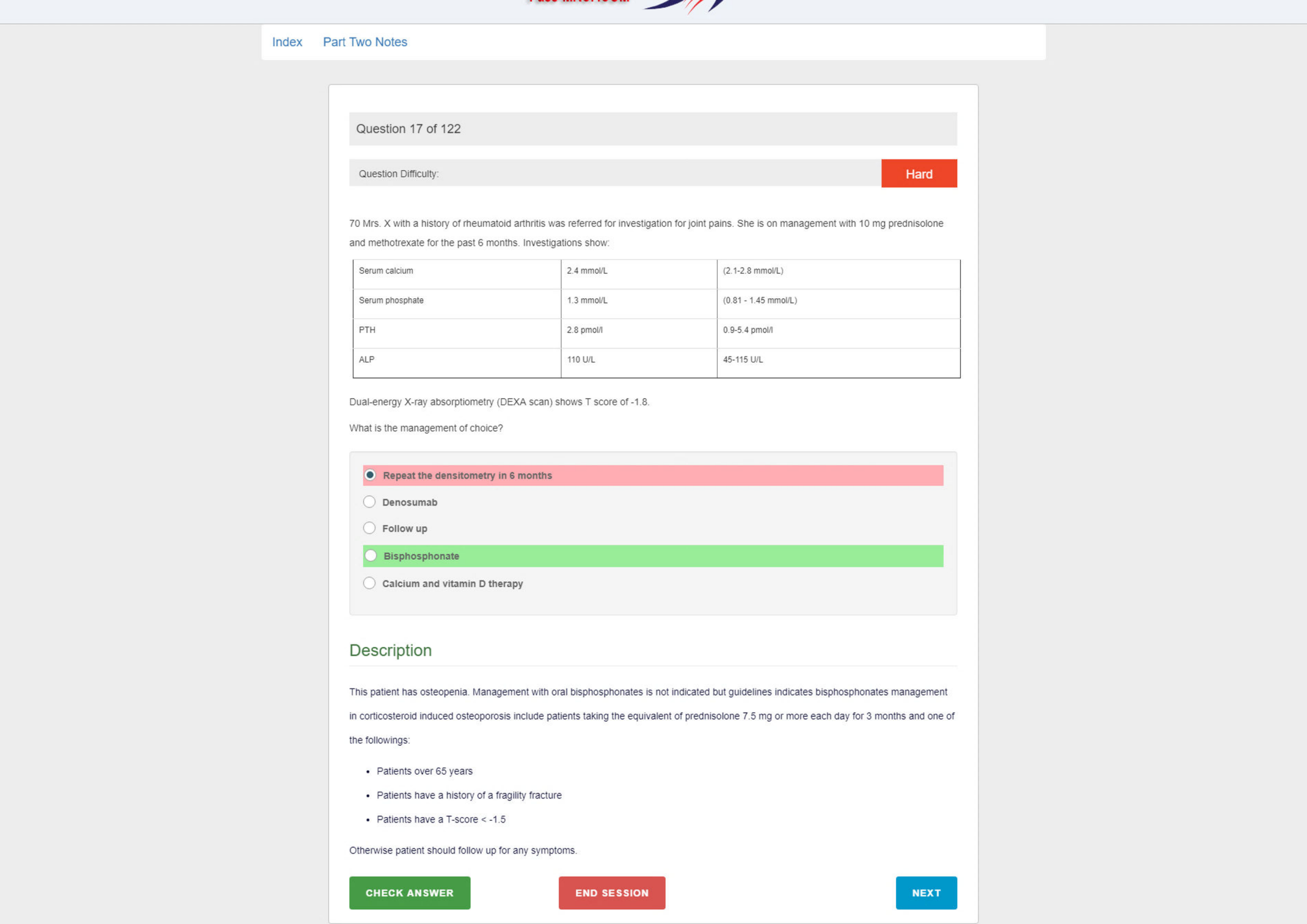
○ **Septic arthritis**
○ **Ulcerative colitis**
● **Rheumatoid arthritis**
○ **Reactive arthritis**
○ **Gout**

Description

Reactive arthritis (Reiter syndrome) is an autoimmune condition that develops in response to an infection (Shigella, Salmonella, Campylobacter {post-enteric} and Chlamydia trachomatis {post STD}).

It is one of the HLA-B27 associated seronegative spondylo-arthropathies. It is manifested by classic triad of :

- Noninfectious urethritis (or diarrhea and dysentery in post-enteric syndrome)
- Arthritis (lower-extremity oligo-arthritis)
- Conjunctivitis



Question 17 of 122

Question Difficulty: **Hard**

70 Mrs. X with a history of rheumatoid arthritis was referred for investigation for joint pains. She is on management with 10 mg prednisolone and methotrexate for the past 6 months. Investigations show:

Serum calcium	2.4 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	1.3 mmol/L	(0.81 - 1.45 mmol/L)
PTH	2.8 pmol/l	0.9-5.4 pmol/l
ALP	110 U/L	45-115 U/L

Dual-energy X-ray absorptiometry (DEXA scan) shows T score of -1.8.

What is the management of choice?

● **Repeat the densitometry in 6 months**
○ **Denosumab**
○ **Follow up**
○ **Bisphosphonate**
○ **Calcium and vitamin D therapy**

Description

This patient has osteopenia. Management with oral bisphosphonates is not indicated but guidelines indicates bisphosphonates management in corticosteroid induced osteoporosis include patients taking the equivalent of prednisolone 7.5 mg or more each day for 3 months and one of the followings:

- Patients over 65 years
- Patients have a history of a fragility fracture
- Patients have a T-score < -1.5

Otherwise patient should follow up for any symptoms.

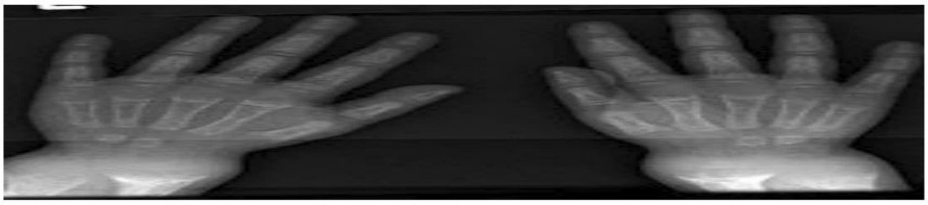
Question 18 of 122

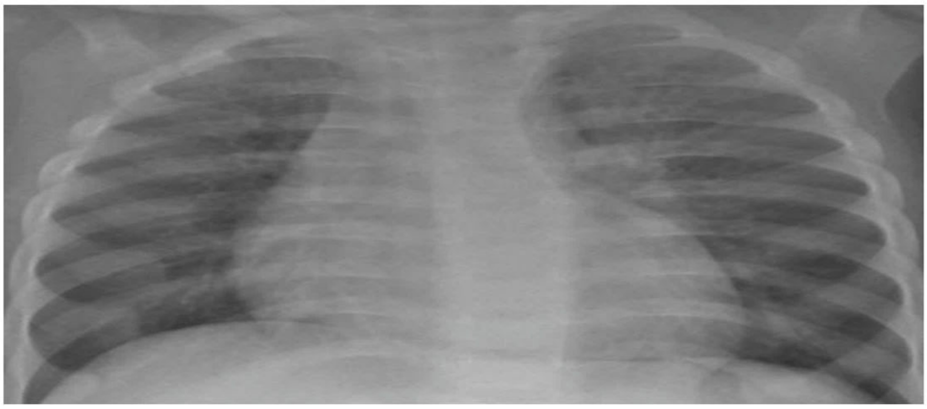
Question Difficulty: **Hard**

3 years old child was referred due to delayed growth. Examination shows generalized muscular hypotonia with bowlegs and knock-knees. His chest shows costochondral junctions bone protrusions. Investigations show:

Serum calcium	1.9 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	0.5 mmol/L	(0.81 - 1.45 mmol/L)
PTH	4.5 pmol/l	0.9-5.4 pmol/l
ALP	160 U/L	45-115 U/L

Hand and chest CXR are shown in the images.





What is the most likely diagnosis?

○ **Vitamin D deficiency rickets**

○ **Vitamin D dependent rickets**

● **Vitamin D resistant rickets**

○ **Paget disease**

○ **Primary hyperparathyroidism**

Description

Vitamin D resistant rickets is differentiated from other types of rickets by inducing hypophosphatemia and hyperphosphaturia.

Vitamin D deficiency rickets occurs due to dietary deficiency of vitamin D, calcium or phosphorus or decreased production of vitamin D from ultraviolet light. It affects adults.

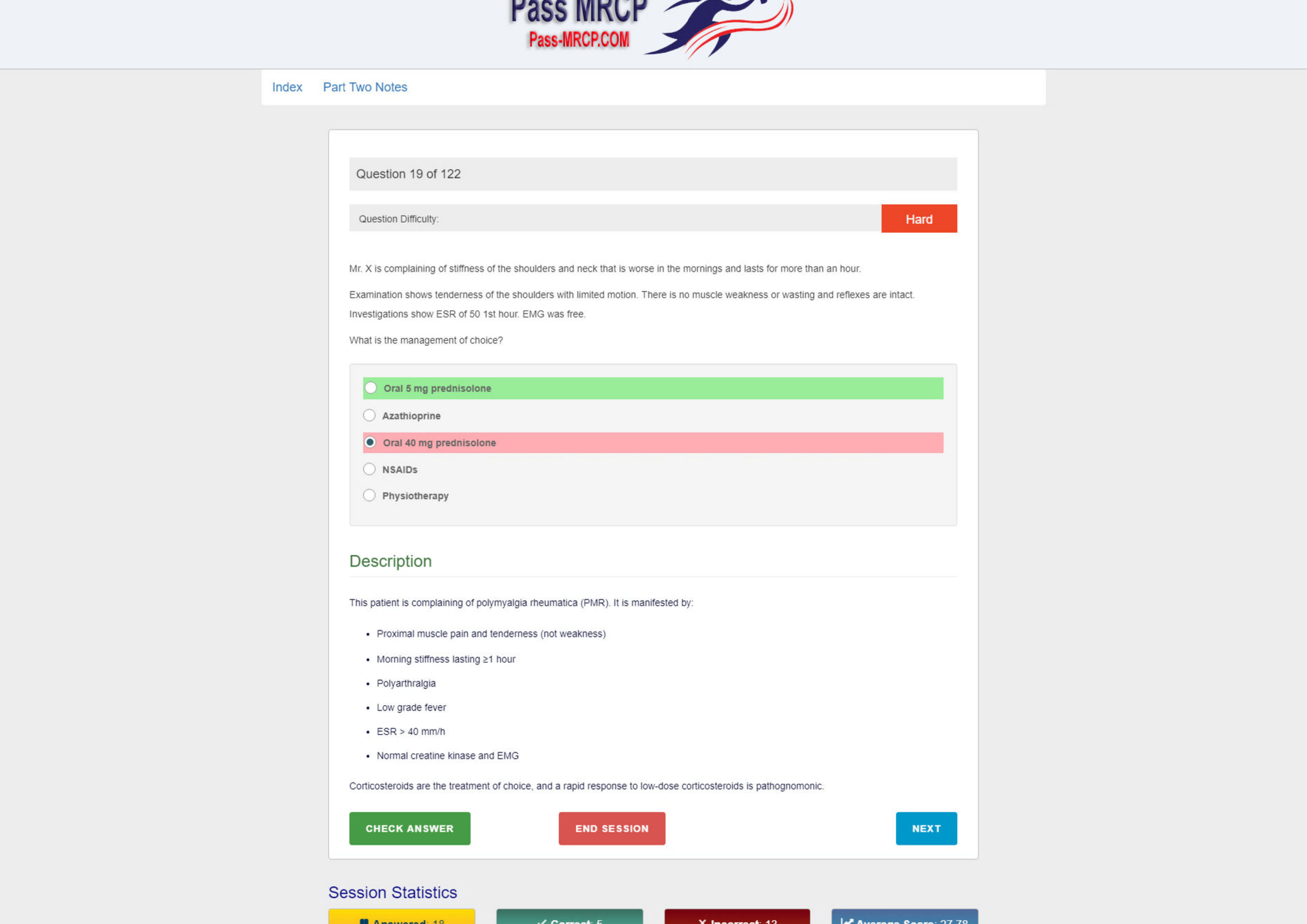
The CXR shows lumbar lordosis, rackety rosary and hands show widening and cupping of metaphyses.

Primary hyperparathyroidism causes hypercalcemia, hypophosphatemia and hyperparathyroidism.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 17 ✓ **Correct**: 4 ✕ **Incorrect**: 13 **Average Score**: 23.53 %



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Part Two Notes

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Question Difficulty: **Hard**

Mr. X is complaining of stiffness of the shoulders and neck that is worse in the mornings and lasts for more than an hour.

Examination shows tenderness of the shoulders with limited motion. There is no muscle weakness or wasting and reflexes are intact.
Investigations show ESR of 50 1st hour. EMG was free.

What is the management of choice?

○ **Oral 5 mg prednisolone**
○ **Azathioprine**
● **Oral 40 mg prednisolone**
○ **NSAIDs**
○ **Physiotherapy**

Description

This patient is complaining of polymyalgia rheumatica (PMR). It is manifested by:

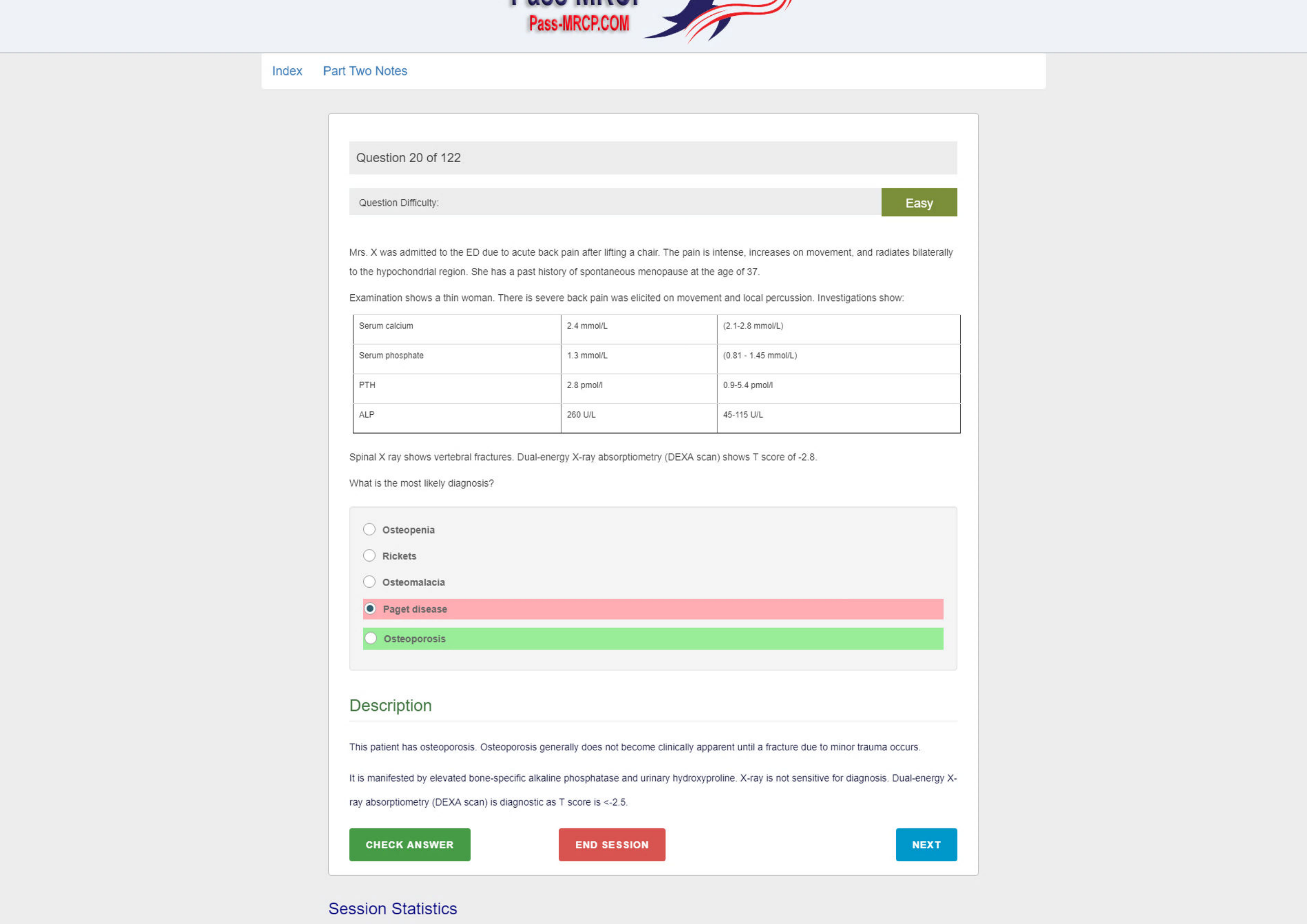
- Proximal muscle pain and tenderness (not weakness)
- Morning stiffness lasting ≥1 hour
- Polyarthralgia
- Low grade fever
- ESR > 40 mm/h
- Normal creatine kinase and EMG

Corticosteroids are the treatment of choice, and a rapid response to low-dose corticosteroids is pathognomonic.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 18
✓ Correct: 5
✗ Incorrect: 13
Average Score: 27.78



Question 20 of 122

Question Difficulty: **Easy**

Mrs. X was admitted to the ED due to acute back pain after lifting a chair. The pain is intense, increases on movement, and radiates bilaterally to the hypochondrial region. She has a past history of spontaneous menopause at the age of 37.

Examination shows a thin woman. There is severe back pain was elicited on movement and local percussion. Investigations show:

Serum calcium	2.4 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	1.3 mmol/L	(0.81 - 1.45 mmol/L)
PTH	2.8 pmol/l	0.9-5.4 pmol/l
ALP	260 U/L	45-115 U/L

Spinal X ray shows vertebral fractures. Dual-energy X-ray absorptiometry (DEXA scan) shows T score of -2.8.

What is the most likely diagnosis?

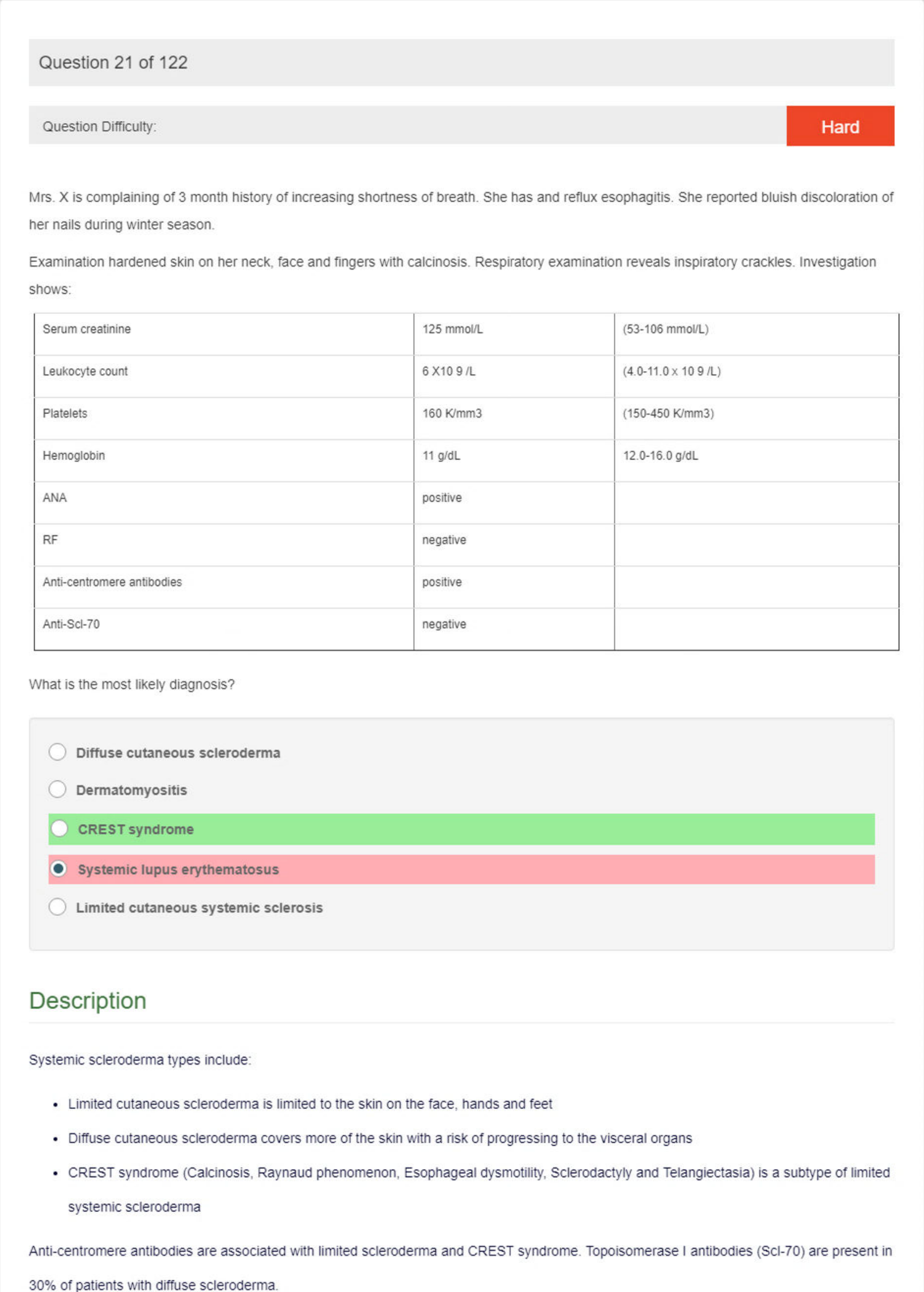
- ○ **Osteopenia**
- ○ **Rickets**
- ○ **Osteomalacia**
- ● **Paget disease**
- ○ **Osteoporosis**

Description

This patient has osteoporosis. Osteoporosis generally does not become clinically apparent until a fracture due to minor trauma occurs.

It is manifested by elevated bone-specific alkaline phosphatase and urinary hydroxyproline. X-ray is not sensitive for diagnosis. Dual-energy X-ray absorptiometry (DEXA scan) is diagnostic as T score is <-2.5.

Session Statistics



Question 21 of 122

Question Difficulty: **Hard**

Mrs. X is complaining of 3 month history of increasing shortness of breath. She has and reflux esophagitis. She reported bluish discoloration of her nails during winter season.

Examination hardened skin on her neck, face and fingers with calcinosis. Respiratory examination reveals inspiratory crackles. Investigation shows:

Serum creatinine	125 mmol/L	(53-106 mmol/L)
Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	160 K/mm3	(150-450 K/mm3)
Hemoglobin	11 g/dL	12.0-16.0 g/dL
ANA	positive	
RF	negative	
Anti-centromere antibodies	positive	
Anti-Scl-70	negative	

What is the most likely diagnosis?

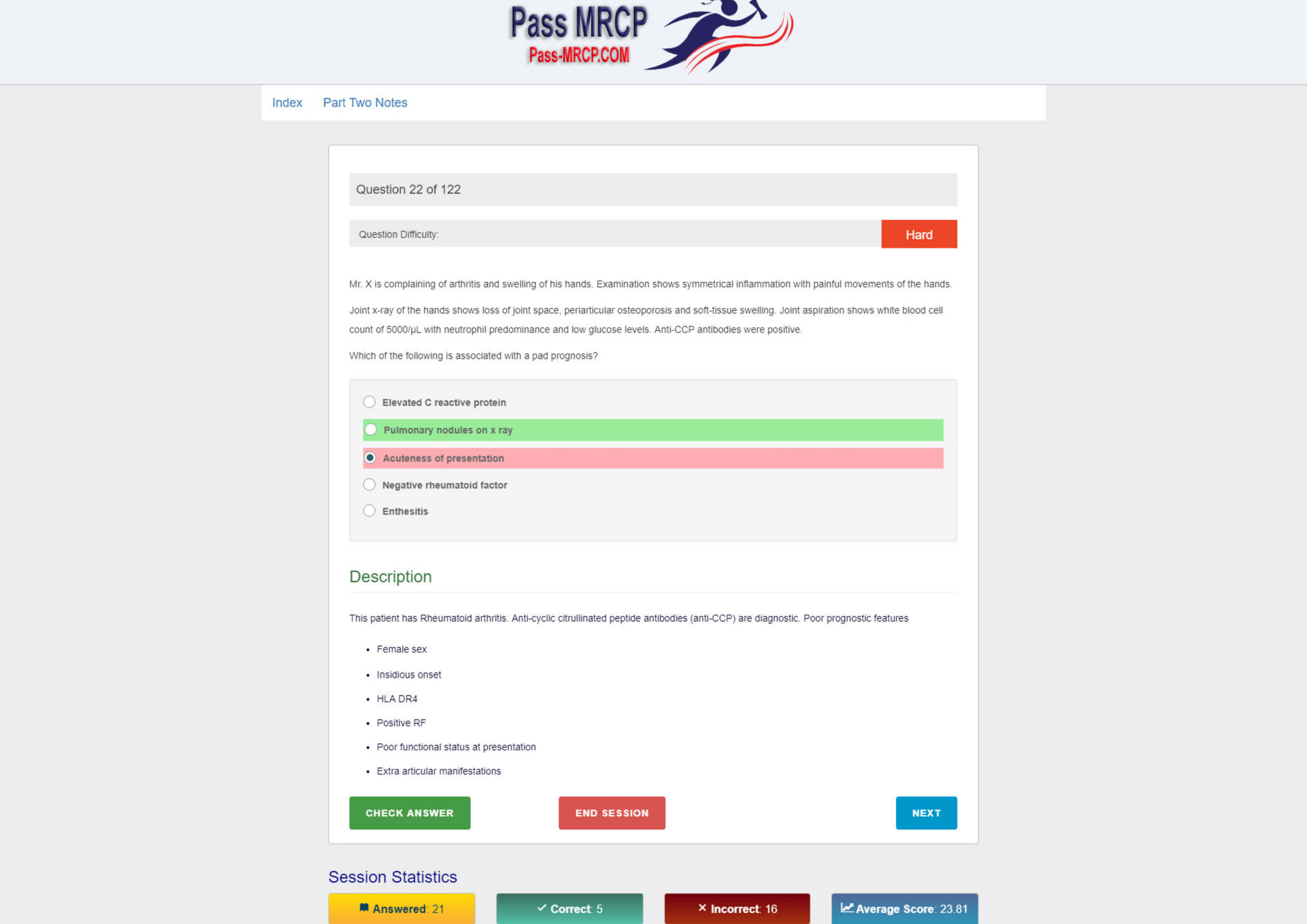
- ○ **Diffuse cutaneous scleroderma**
- ○ **Dermatomyositis**
- ○ **CREST syndrome**
- ● **Systemic lupus erythematosus**
- ○ **Limited cutaneous systemic sclerosis**

Description

Systemic scleroderma types include:

- Limited cutaneous scleroderma is limited to the skin on the face, hands and feet
- Diffuse cutaneous scleroderma covers more of the skin with a risk of progressing to the visceral organs
- CREST syndrome (Calcinosis, Raynaud phenomenon, Esophageal dysmotility, Sclerodactyly and Telangiectasia) is a subtype of limited systemic scleroderma

Anti-centromere antibodies are associated with limited scleroderma and CREST syndrome. Topoisomerase I antibodies (Scl-70) are present in 30% of patients with diffuse scleroderma.



Question 22 of 122

Question Difficulty: **Hard**

Mr. X is complaining of arthritis and swelling of his hands. Examination shows symmetrical inflammation with painful movements of the hands.

Joint x-ray of the hands shows loss of joint space, periarticular osteoporosis and soft-tissue swelling. Joint aspiration shows white blood cell count of 5000/μL with neutrophil predominance and low glucose levels. Anti-CCP antibodies were positive.

Which of the following is associated with a pad prognosis?

○ **Elevated C reactive protein**
○ **Pulmonary nodules on x ray**
● **Acuteness of presentation**
○ **Negative rheumatoid factor**
○ **Enthesitis**

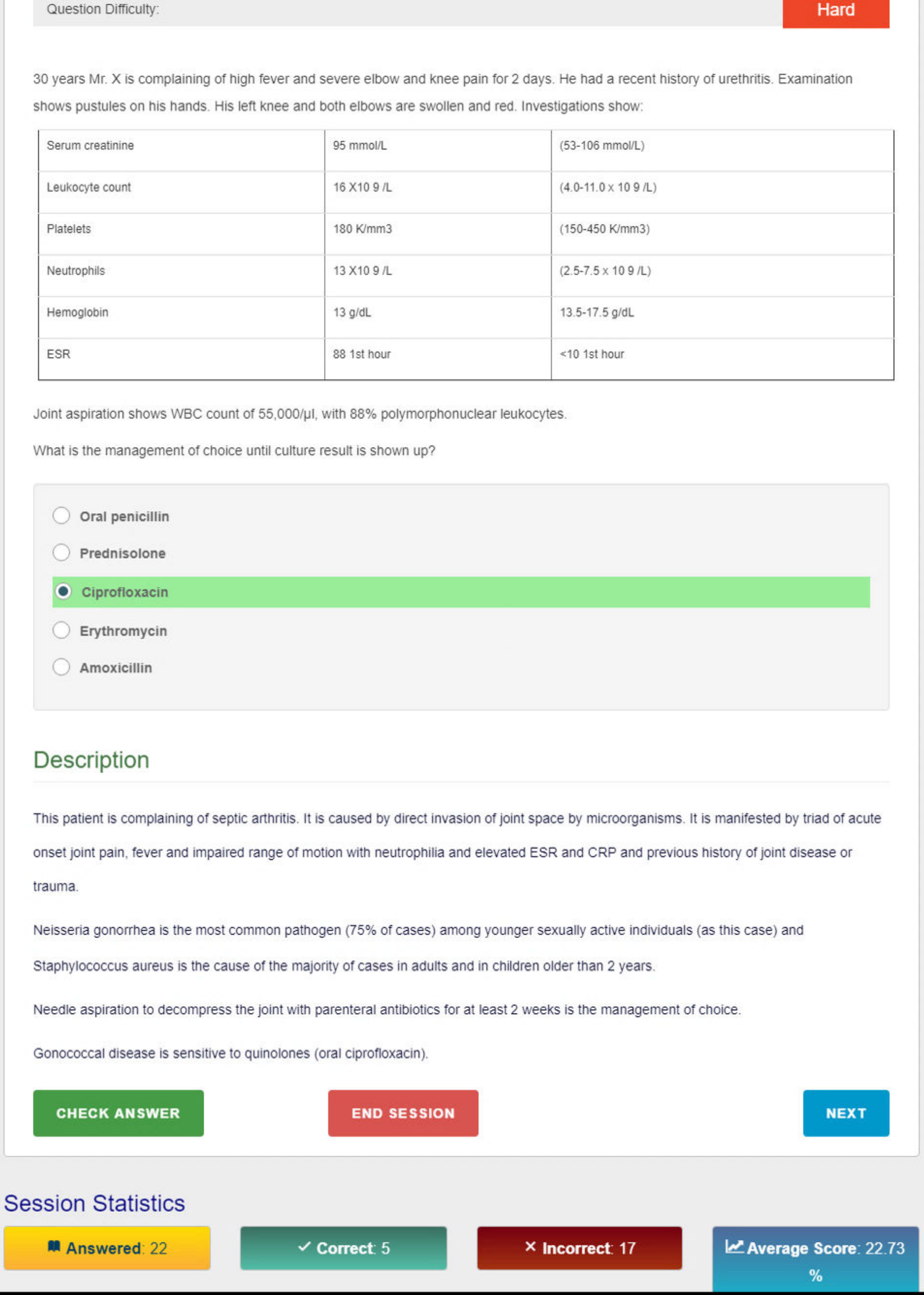
Description

This patient has Rheumatoid arthritis. Anti-cyclic citrullinated peptide antibodies (anti-CCP) are diagnostic. Poor prognostic features

- Female sex
- Insidious onset
- HLA DR4
- Positive RF
- Poor functional status at presentation
- Extra articular manifestations

Session Statistics

Answered: 21
Correct: 5
Incorrect: 16
Average Score: 23.81



Question Difficulty: **Hard**

30 years Mr. X is complaining of high fever and severe elbow and knee pain for 2 days. He had a recent history of urethritis. Examination shows pustules on his hands. His left knee and both elbows are swollen and red. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	13 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	88 1st hour	<10 1st hour

Joint aspiration shows WBC count of 55,000/µl, with 88% polymorphonuclear leukocytes.

What is the management of choice until culture result is shown up?

- ○ **Oral penicillin**
- ○ **Prednisolone**
- ● **Ciprofloxacin**
- ○ **Erythromycin**
- ○ **Amoxicillin**

Description

This patient is complaining of septic arthritis. It is caused by direct invasion of joint space by microorganisms. It is manifested by triad of acute onset joint pain, fever and impaired range of motion with neutrophilia and elevated ESR and CRP and previous history of joint disease or trauma.

Neisseria gonorrhea is the most common pathogen (75% of cases) among younger sexually active individuals (as this case) and Staphylococcus aureus is the cause of the majority of cases in adults and in children older than 2 years.

Needle aspiration to decompress the joint with parenteral antibiotics for at least 2 weeks is the management of choice.

Gonococcal disease is sensitive to quinolones (oral ciprofloxacin).

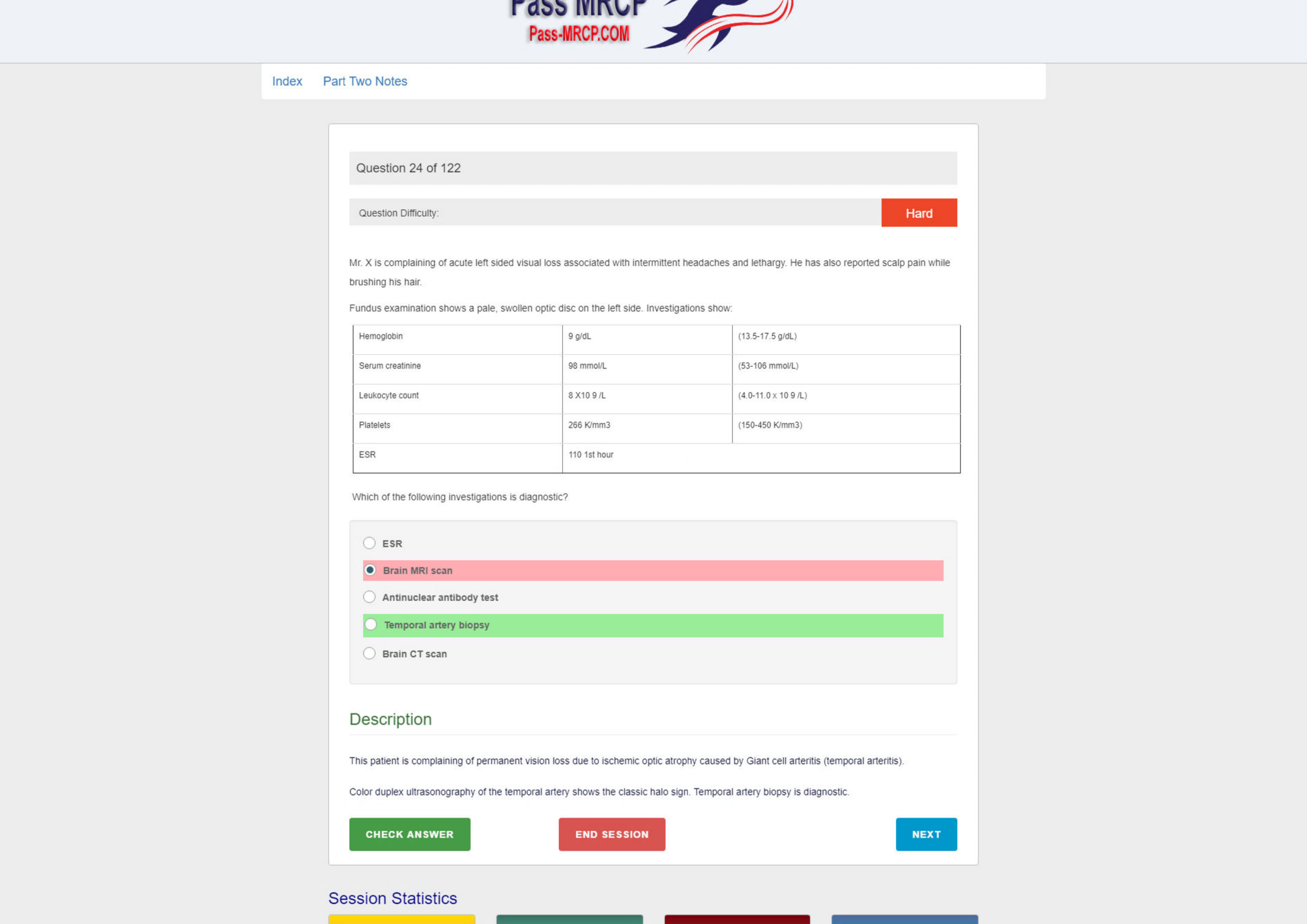
Session Statistics

Answered: 22

✓ **Correct**: 5

✕ **Incorrect**: 17

Average Score: 22.73 %



Question 24 of 122

Question Difficulty: Hard

Mr. X is complaining of acute left sided visual loss associated with intermittent headaches and lethargy. He has also reported scalp pain while brushing his hair.

Fundus examination shows a pale, swollen optic disc on the left side. Investigations show:

Hemoglobin	9 g/dL	(13.5-17.5 g/dL)
Serum creatinine	98 mmol/L	(53-106 mmol/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	266 K/mm3	(150-450 K/mm3)
ESR	110 1st hour	

Which of the following investigations is diagnostic?

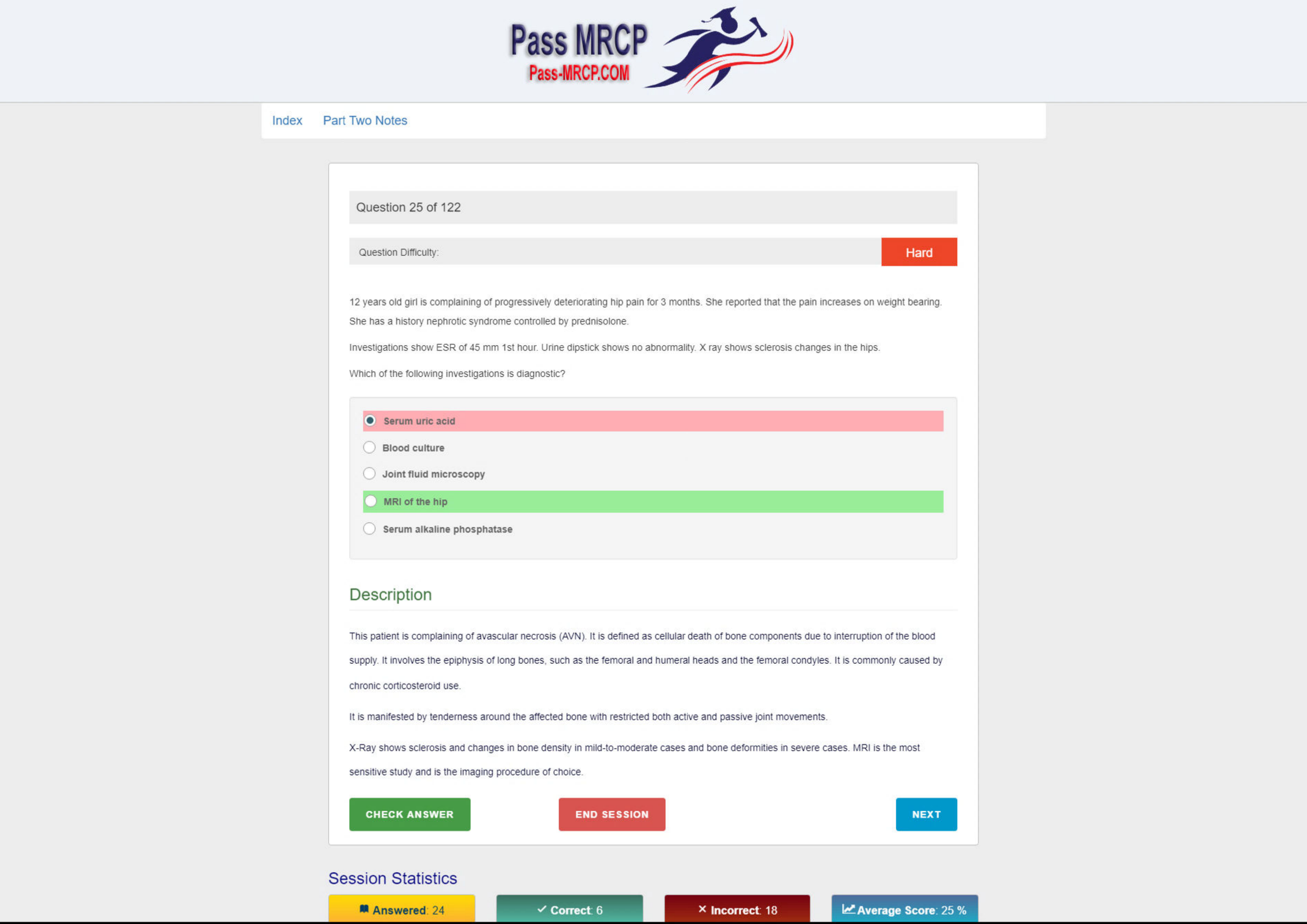
- ○ ESR
- ● Brain MRI scan
- ○ Antinuclear antibody test
- ○ Temporal artery biopsy
- ○ Brain CT scan

Description

This patient is complaining of permanent vision loss due to ischemic optic atrophy caused by Giant cell arteritis (temporal arteritis).

Color duplex ultrasonography of the temporal artery shows the classic halo sign. Temporal artery biopsy is diagnostic.

Session Statistics



Question 25 of 122

Question Difficulty: **Hard**

12 years old girl is complaining of progressively deteriorating hip pain for 3 months. She reported that the pain increases on weight bearing. She has a history nephrotic syndrome controlled by prednisolone.

Investigations show ESR of 45 mm 1st hour. Urine dipstick shows no abnormality. X ray shows sclerosis changes in the hips.

Which of the following investigations is diagnostic?

- ● **Serum uric acid**
- ○ **Blood culture**
- ○ **Joint fluid microscopy**
- ○ **MRI of the hip**
- ○ **Serum alkaline phosphatase**

Description

This patient is complaining of avascular necrosis (AVN). It is defined as cellular death of bone components due to interruption of the blood supply. It involves the epiphysis of long bones, such as the femoral and humeral heads and the femoral condyles. It is commonly caused by chronic corticosteroid use.

It is manifested by tenderness around the affected bone with restricted both active and passive joint movements.

X-Ray shows sclerosis and changes in bone density in mild-to-moderate cases and bone deformities in severe cases. MRI is the most sensitive study and is the imaging procedure of choice.

Session Statistics

Answered: 24
✓ **Correct**: 6
✕ **Incorrect**: 18
Average Score: 25 %

Question 26 of 122

Question Difficulty: **Hard**

16 years Miss X is complaining of fever and knee and elbow pain. She reported she has stiffness early in the morning and blue discoloration of her nails especially in cold weather.

Examination showed of fever 38.5. There is butterfly rash on her cheeks and mouth ulcer. There is bilateral cervical lymphadenopathy. Investigation showed:

Bilirubin	15 µmol/L	(2-17 µmol/L)
ALT	24 U/L	(8-20 U/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
Leukocyte count	4.2 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	120 K/mm3	(150-450 K/mm3)
Neutrophils	3.5 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.4 X10 9 /L	(1.5-3.5 x 10 9 /L)
Erythrocyte count	3.5 million/mm3	3.5-5.5 million/mm 3
Hemoglobin	9 g/dL	12.0-16.0 g/dL
MCV	85 fl	80-100 fl
Neutrophils	3.5 X10 9 /L	(2.5-7.5 x 10 9 /L)
Lymphocytes	0.4 X10 9 /L	(1.5-3.5 x 10 9 /L)
Erythrocyte count	3.5 million/mm3	3.5-5.5 million/mm 3
Hemoglobin	9 g/dL	12.0-16.0 g/dL
MCV	85 fl	80-100 fl
ESR	45 1st hour	<10 1st hour

There is ++ protein in urine dipstick and positive ANA and RF.

What is the most likely diagnosis?

- ○ **Behcet syndrome**
- ○ **Systemic sclerosis**
- ● **Wegener granulomatosis**
- ○ **Sjogren syndrome**
- ○ **Systemic lupus erythematosus**

Description

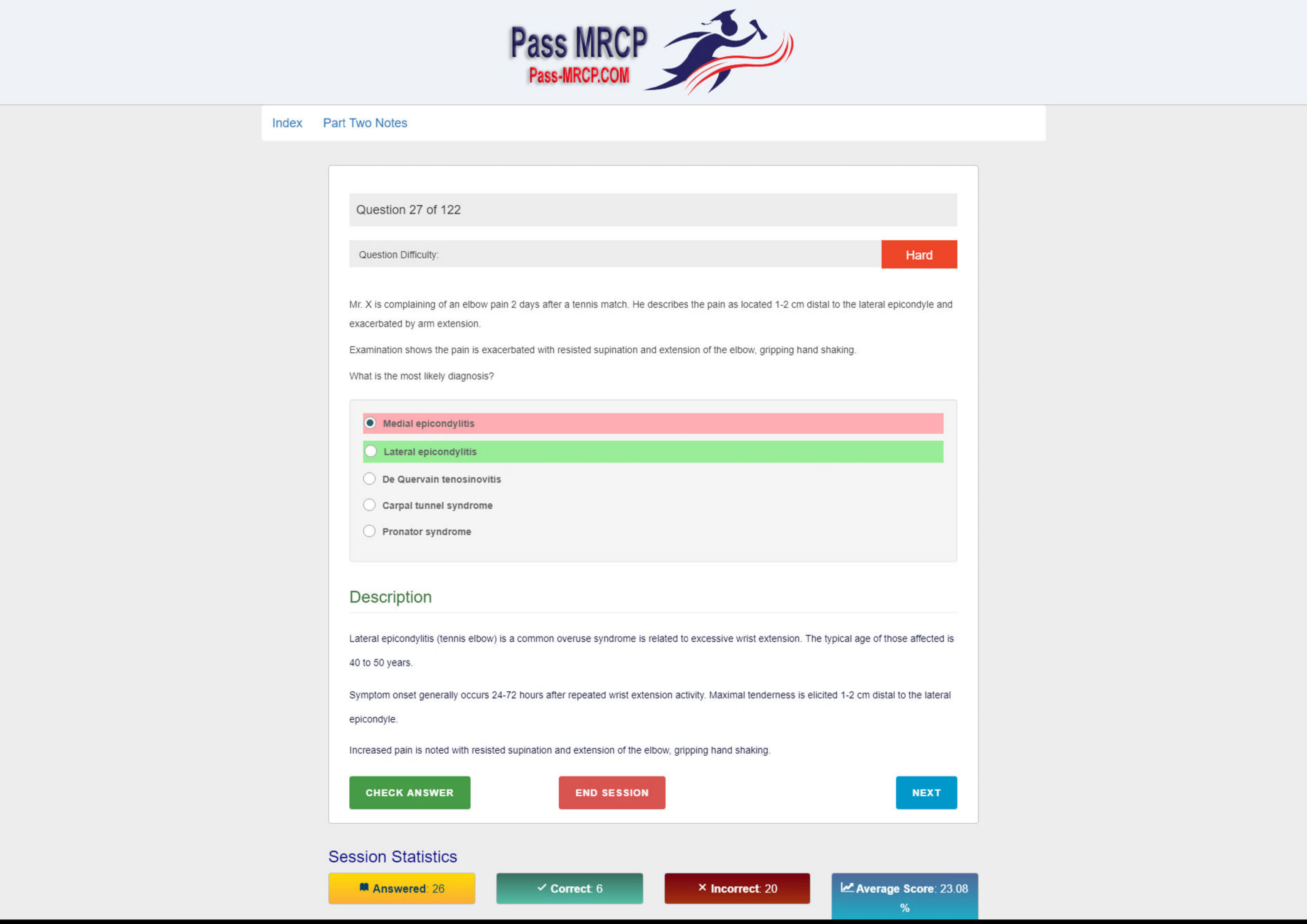
More than 90% of cases of SLE occur in women, frequently starting at childbearing age. The classic presentation of SLE is a triad of fever, joint pain, and rash. SLE renal complications are frequent.

ANA positive in 99% of cases (not specific for diagnosis but good as screening test) and Rheumatoid factor positive in 20% of cases.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 25 ✓ **Correct**: 6 ✕ **Incorrect**: 19 **Average Score**: 24 %



Question 27 of 122

Question Difficulty: Hard

Mr. X is complaining of an elbow pain 2 days after a tennis match. He describes the pain as located 1-2 cm distal to the lateral epicondyle and exacerbated by arm extension.

Examination shows the pain is exacerbated with resisted supination and extension of the elbow, gripping hand shaking.

What is the most likely diagnosis?

- ● Medial epicondylitis
- ○ Lateral epicondylitis
- ○ De Quervain tenosinovitis
- ○ Carpal tunnel syndrome
- ○ Pronator syndrome

Description

Lateral epicondylitis (tennis elbow) is a common overuse syndrome is related to excessive wrist extension. The typical age of those affected is 40 to 50 years.

Symptom onset generally occurs 24-72 hours after repeated wrist extension activity. Maximal tenderness is elicited 1-2 cm distal to the lateral epicondyle.

Increased pain is noted with resisted supination and extension of the elbow, gripping hand shaking.

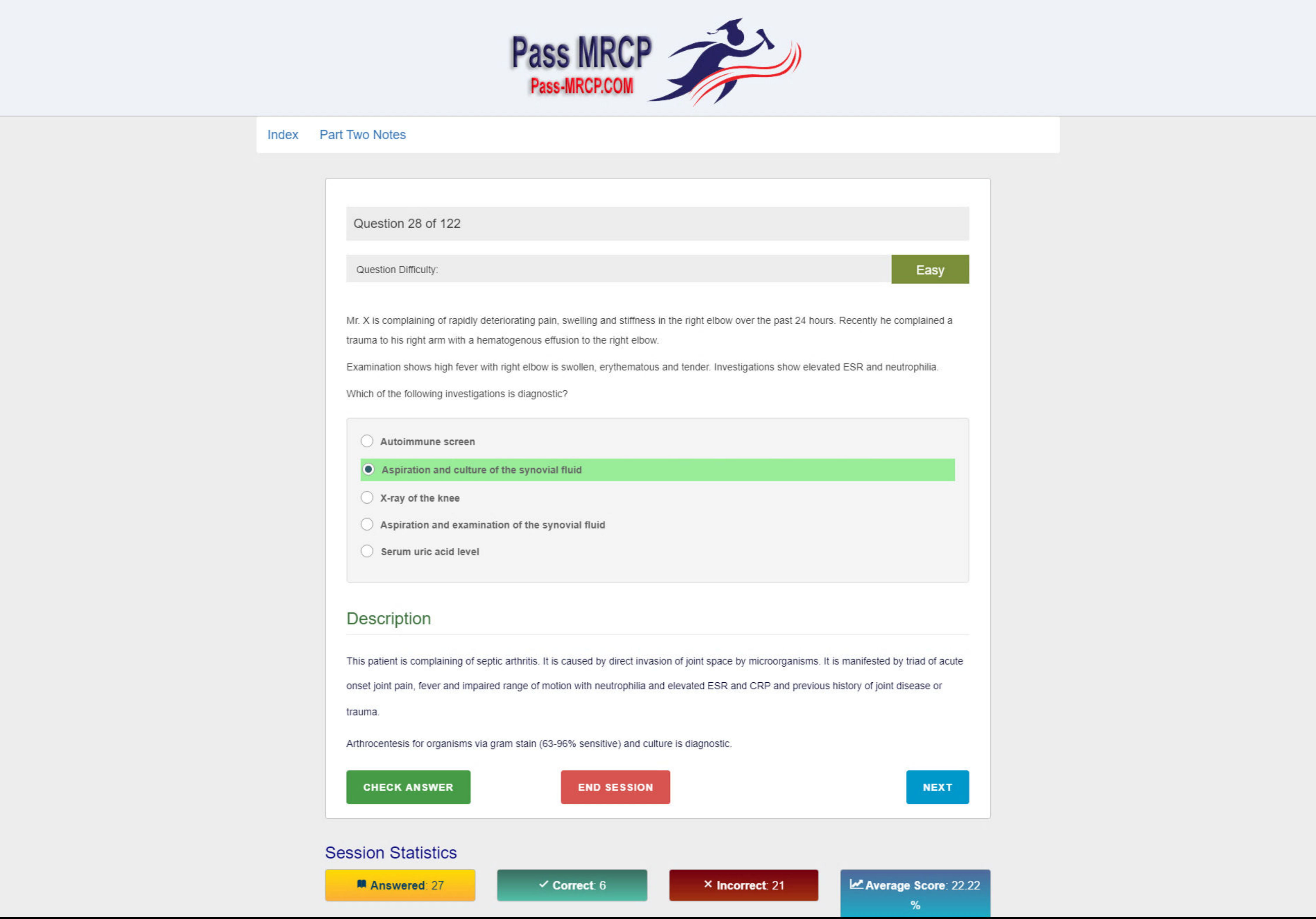
Session Statistics

Answered: 26

✓ Correct: 6

✕ Incorrect: 20

Average Score: 23.08 %



Question 28 of 122

Question Difficulty: Easy

Mr. X is complaining of rapidly deteriorating pain, swelling and stiffness in the right elbow over the past 24 hours. Recently he complained a trauma to his right arm with a hematogenous effusion to the right elbow.

Examination shows high fever with right elbow is swollen, erythematous and tender. Investigations show elevated ESR and neutrophilia.

Which of the following investigations is diagnostic?

- ○ **Autoimmune screen**
- ● **Aspiration and culture of the synovial fluid**
- ○ **X-ray of the knee**
- ○ **Aspiration and examination of the synovial fluid**
- ○ **Serum uric acid level**

Description

This patient is complaining of septic arthritis. It is caused by direct invasion of joint space by microorganisms. It is manifested by triad of acute onset joint pain, fever and impaired range of motion with neutrophilia and elevated ESR and CRP and previous history of joint disease or trauma.

Arthrocentesis for organisms via gram stain (63-96% sensitive) and culture is diagnostic.

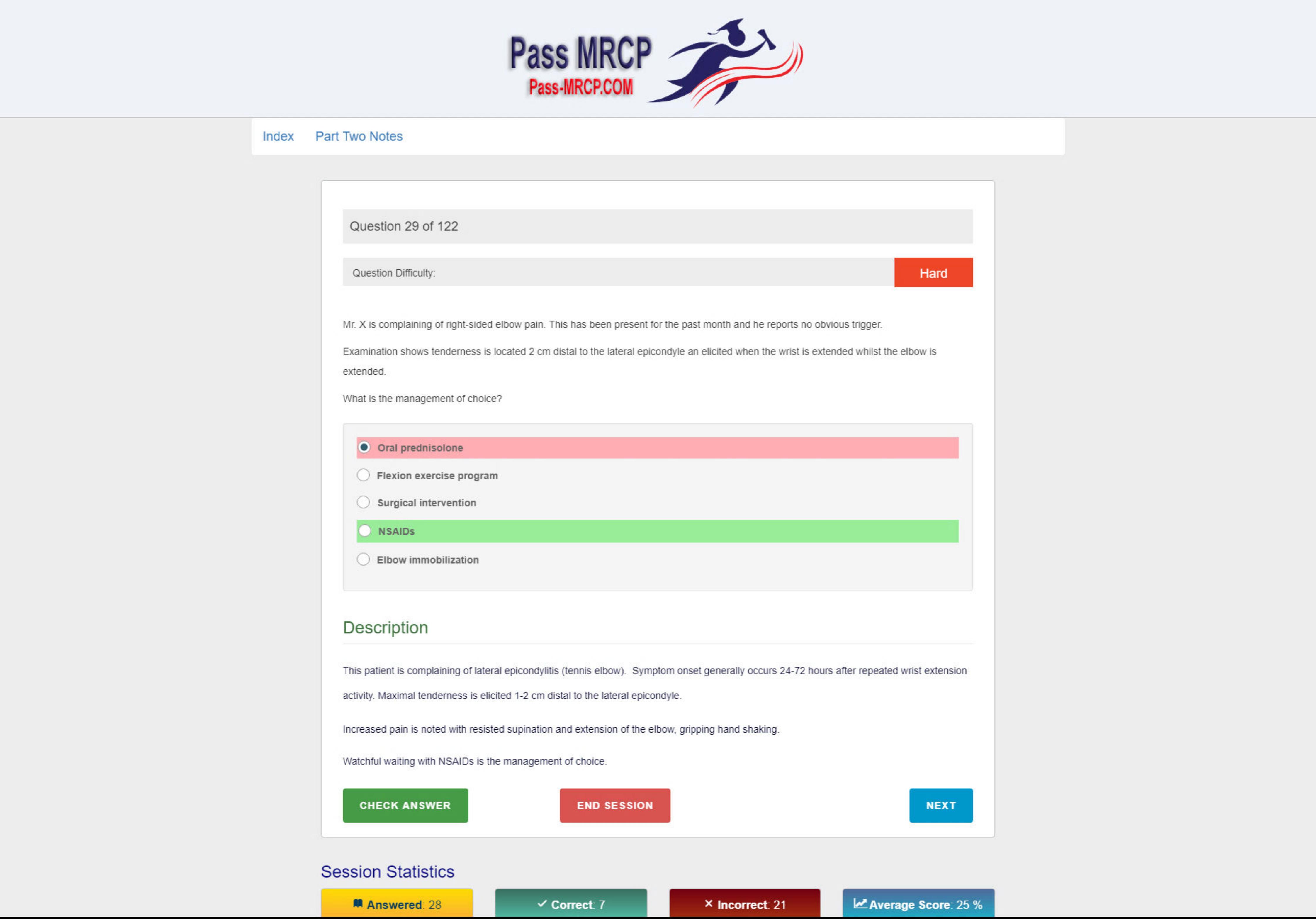
Session Statistics

Answered: 27

✓ **Correct**: 6

✕ **Incorrect**: 21

Average Score: 22.22 %



Question 29 of 122

Question Difficulty: Hard

Mr. X is complaining of right-sided elbow pain. This has been present for the past month and he reports no obvious trigger.

Examination shows tenderness is located 2 cm distal to the lateral epicondyle an elicited when the wrist is extended whilst the elbow is extended.

What is the management of choice?

- ● Oral prednisolone
- ○ Flexion exercise program
- ○ Surgical intervention
- ○ NSAIDs
- ○ Elbow immobilization

Description

This patient is complaining of lateral epicondylitis (tennis elbow). Symptom onset generally occurs 24-72 hours after repeated wrist extension activity. Maximal tenderness is elicited 1-2 cm distal to the lateral epicondyle.

Increased pain is noted with resisted supination and extension of the elbow, gripping hand shaking.

Watchful waiting with NSAIDs is the management of choice.

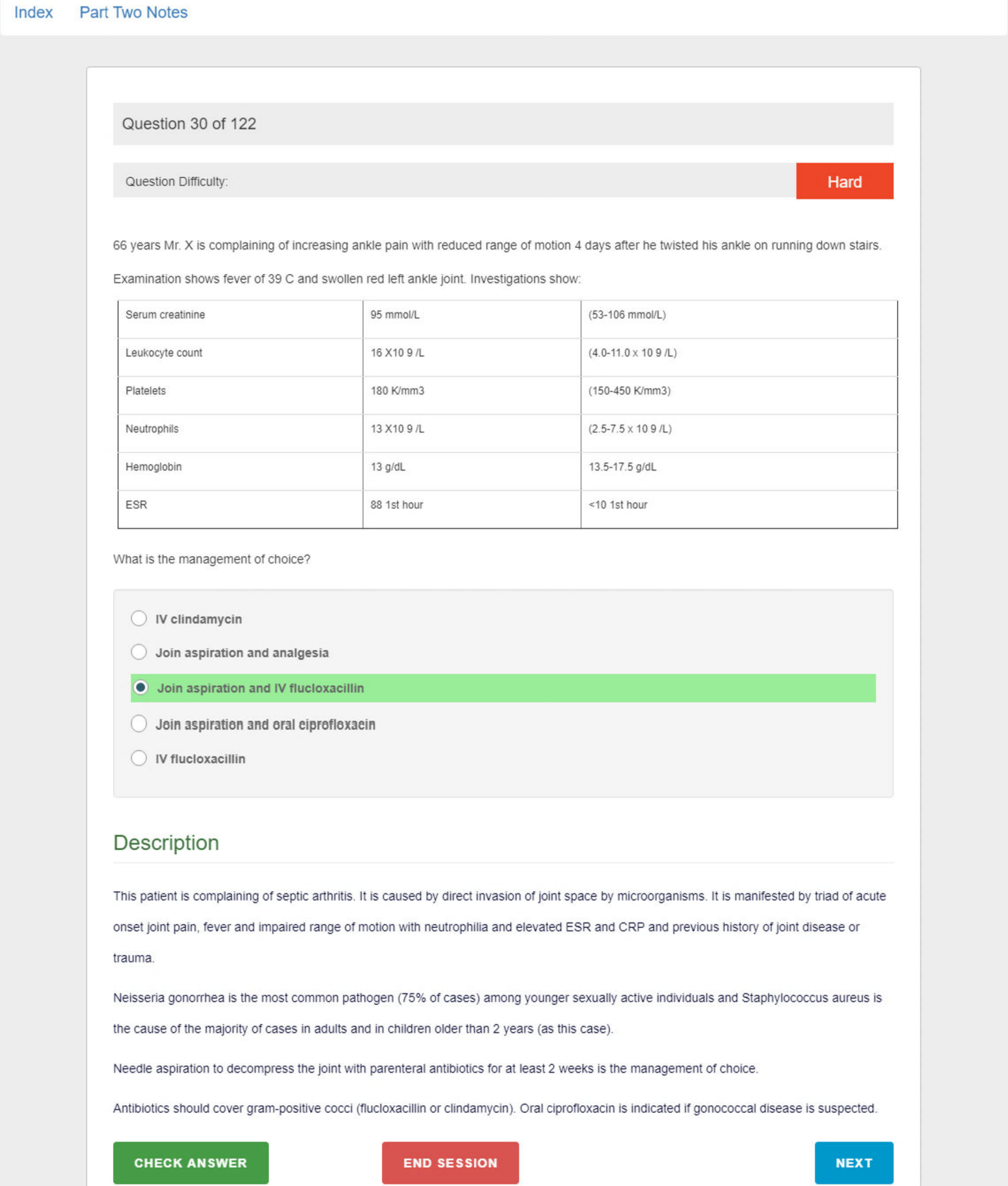
Session Statistics

Answered: 28

✓ Correct: 7

✕ Incorrect: 21

Average Score: 25 %



Question 30 of 122

Question Difficulty: **Hard**

66 years Mr. X is complaining of increasing ankle pain with reduced range of motion 4 days after he twisted his ankle on running down stairs.

Examination shows fever of 39 C and swollen red left ankle joint. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	13 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	88 1st hour	<10 1st hour

What is the management of choice?

- ○ **IV clindamycin**
- ○ **Join aspiration and analgesia**
- ● **Join aspiration and IV flucloxacillin**
- ○ **Join aspiration and oral ciprofloxacin**
- ○ **IV flucloxacillin**

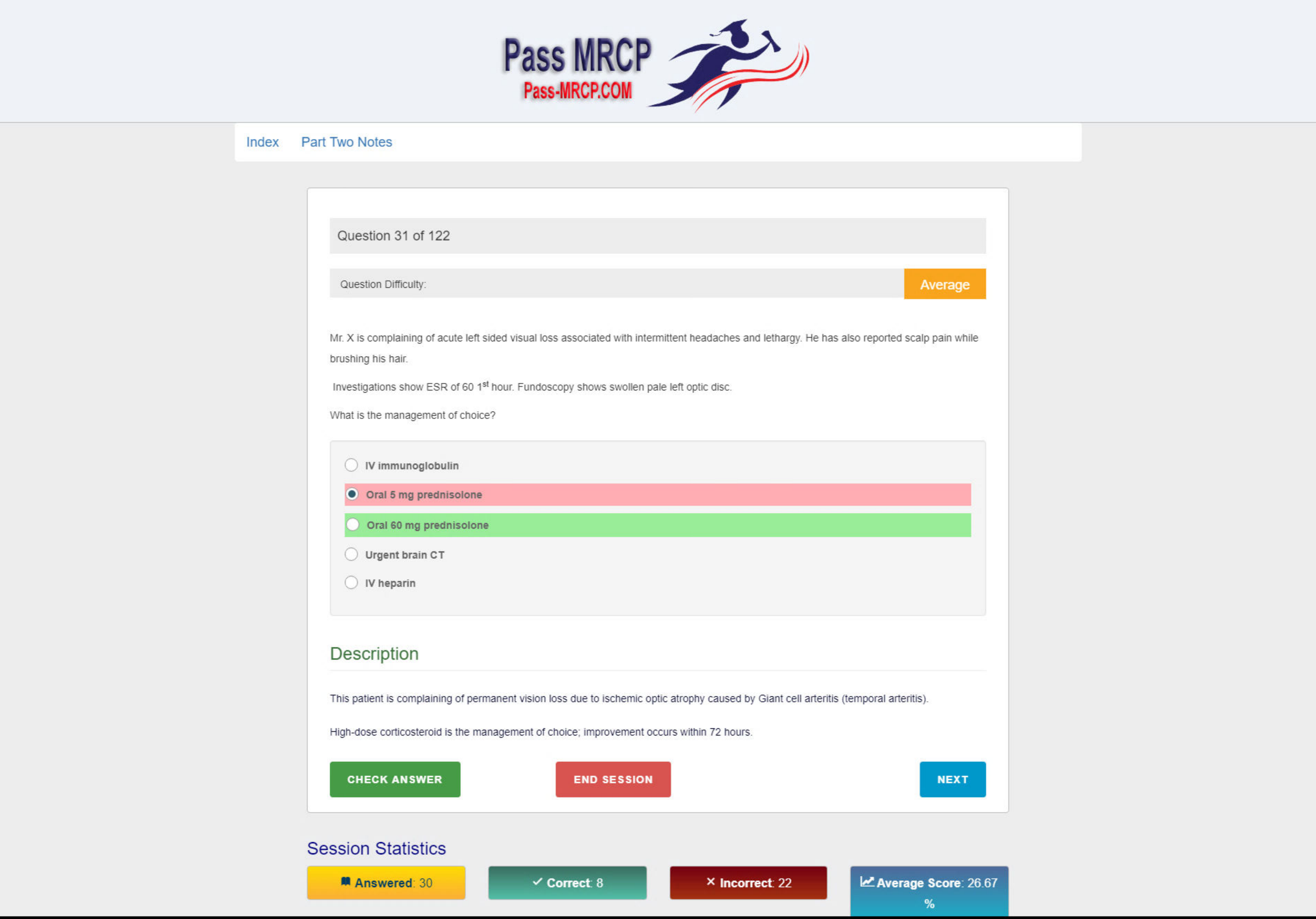
Description

This patient is complaining of septic arthritis. It is caused by direct invasion of joint space by microorganisms. It is manifested by triad of acute onset joint pain, fever and impaired range of motion with neutrophilia and elevated ESR and CRP and previous history of joint disease or trauma.

Neisseria gonorrhea is the most common pathogen (75% of cases) among younger sexually active individuals and Staphylococcus aureus is the cause of the majority of cases in adults and in children older than 2 years (as this case).

Needle aspiration to decompress the joint with parenteral antibiotics for at least 2 weeks is the management of choice.

Antibiotics should cover gram-positive cocci (flucloxacillin or clindamycin). Oral ciprofloxacin is indicated if gonococcal disease is suspected.



Question 31 of 122

Question Difficulty: Average

Mr. X is complaining of acute left sided visual loss associated with intermittent headaches and lethargy. He has also reported scalp pain while brushing his hair.

Investigations show ESR of 60 1st hour. Fundoscopy shows swollen pale left optic disc.

What is the management of choice?

- ○ IV immunoglobulin
- ● Oral 5 mg prednisolone
- ○ Oral 60 mg prednisolone
- ○ Urgent brain CT
- ○ IV heparin

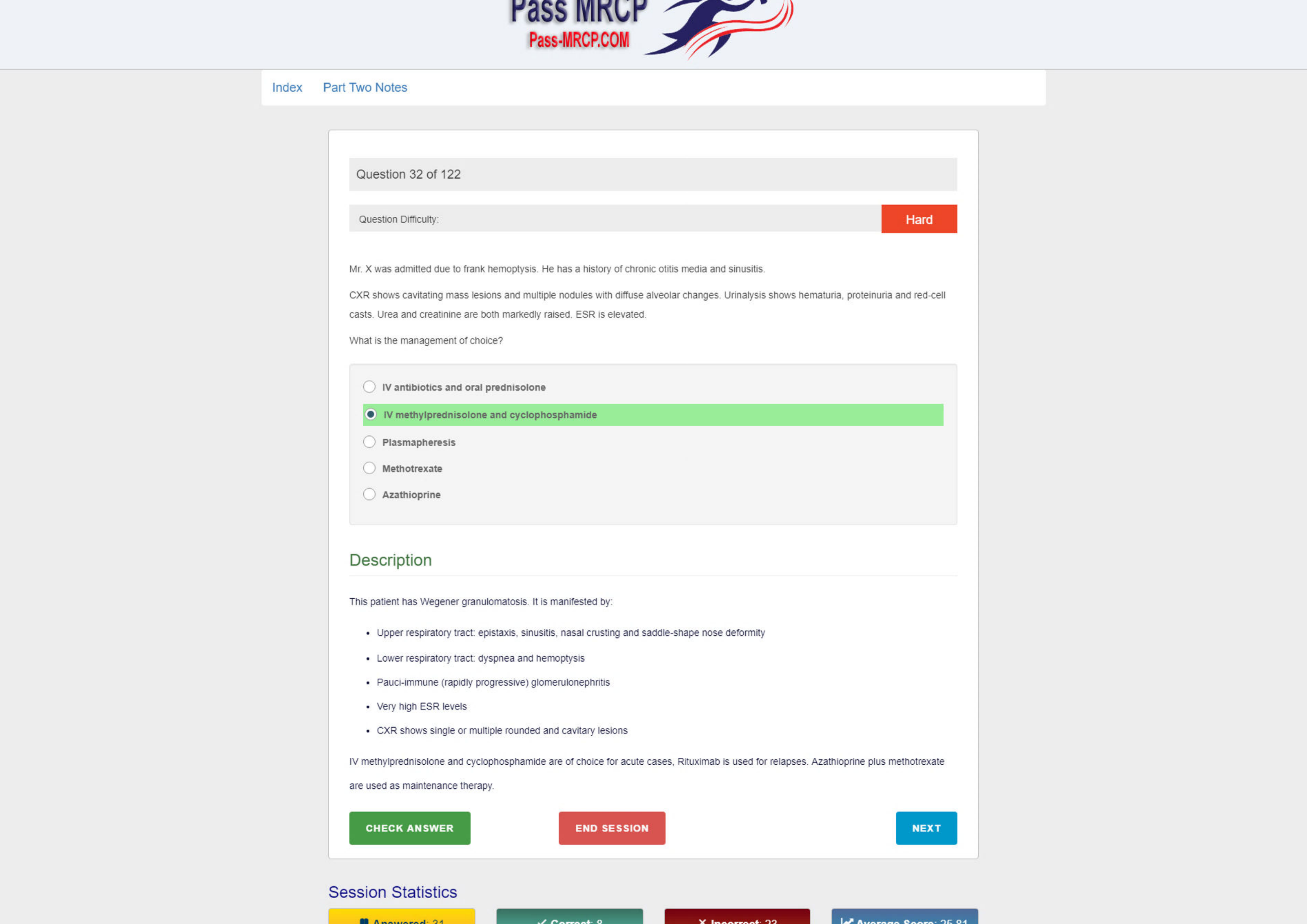
Description

This patient is complaining of permanent vision loss due to ischemic optic atrophy caused by Giant cell arteritis (temporal arteritis).

High-dose corticosteroid is the management of choice; improvement occurs within 72 hours.

Session Statistics

Answered: 30
✓ Correct: 8
× Incorrect: 22
Average Score: 26.67 %



Question 32 of 122

Question Difficulty: **Hard**

Mr. X was admitted due to frank hemoptysis. He has a history of chronic otitis media and sinusitis.

CXR shows cavitating mass lesions and multiple nodules with diffuse alveolar changes. Urinalysis shows hematuria, proteinuria and red-cell casts. Urea and creatinine are both markedly raised. ESR is elevated.

What is the management of choice?

○ **IV antibiotics and oral prednisolone**
● **IV methylprednisolone and cyclophosphamide**
○ **Plasmapheresis**
○ **Methotrexate**
○ **Azathioprine**

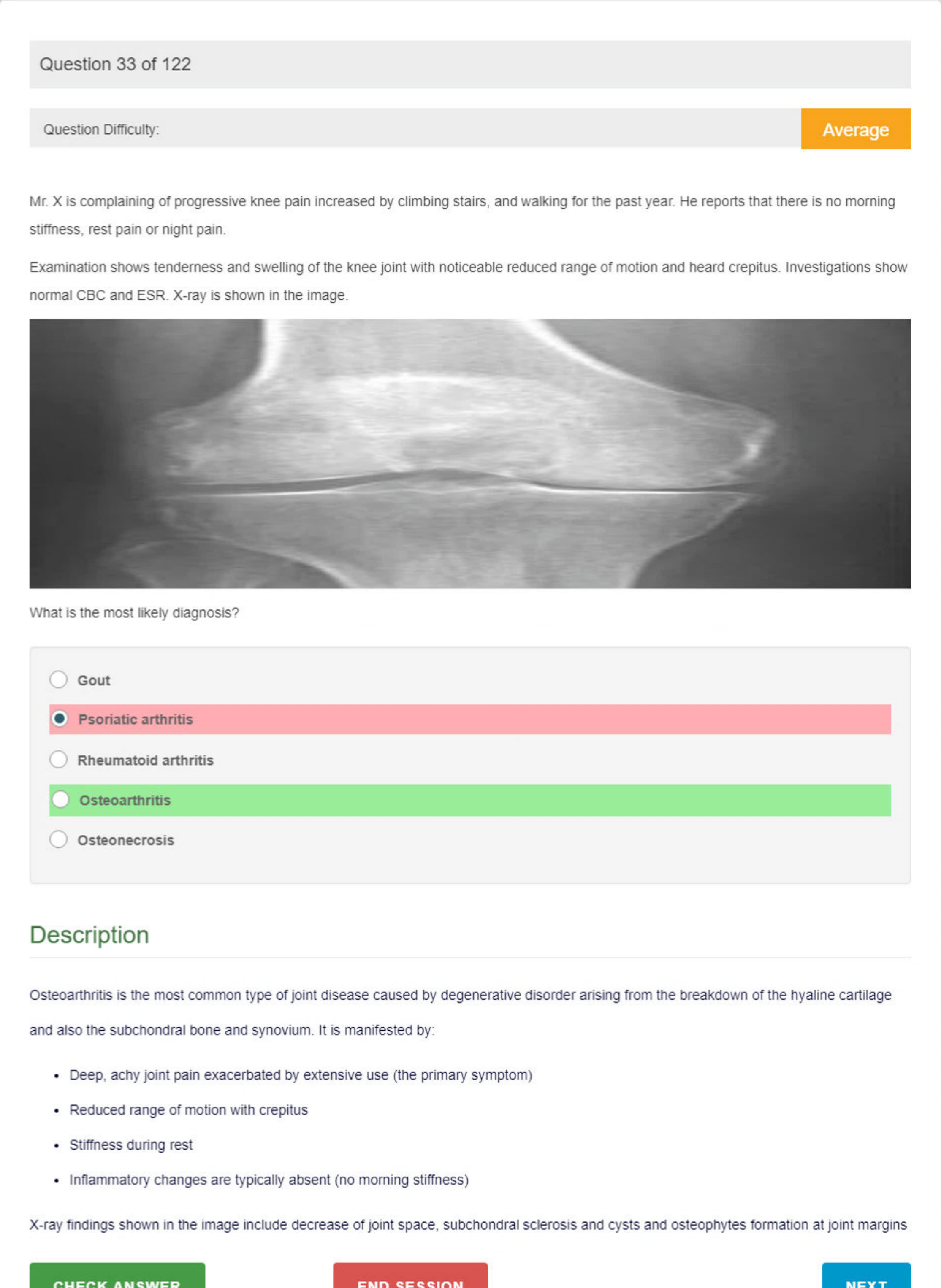
Description

This patient has Wegener granulomatosis. It is manifested by:

- Upper respiratory tract: epistaxis, sinusitis, nasal crusting and saddle-shape nose deformity
- Lower respiratory tract: dyspnea and hemoptysis
- Pauci-immune (rapidly progressive) glomerulonephritis
- Very high ESR levels
- CXR shows single or multiple rounded and cavitary lesions

IV methylprednisolone and cyclophosphamide are of choice for acute cases, Rituximab is used for relapses. Azathioprine plus methotrexate are used as maintenance therapy.

Session Statistics



Question 33 of 122

Question Difficulty: **Average**

Mr. X is complaining of progressive knee pain increased by climbing stairs, and walking for the past year. He reports that there is no morning stiffness, rest pain or night pain.

Examination shows tenderness and swelling of the knee joint with noticeable reduced range of motion and heard crepitus. Investigations show normal CBC and ESR. X-ray is shown in the image.

What is the most likely diagnosis?

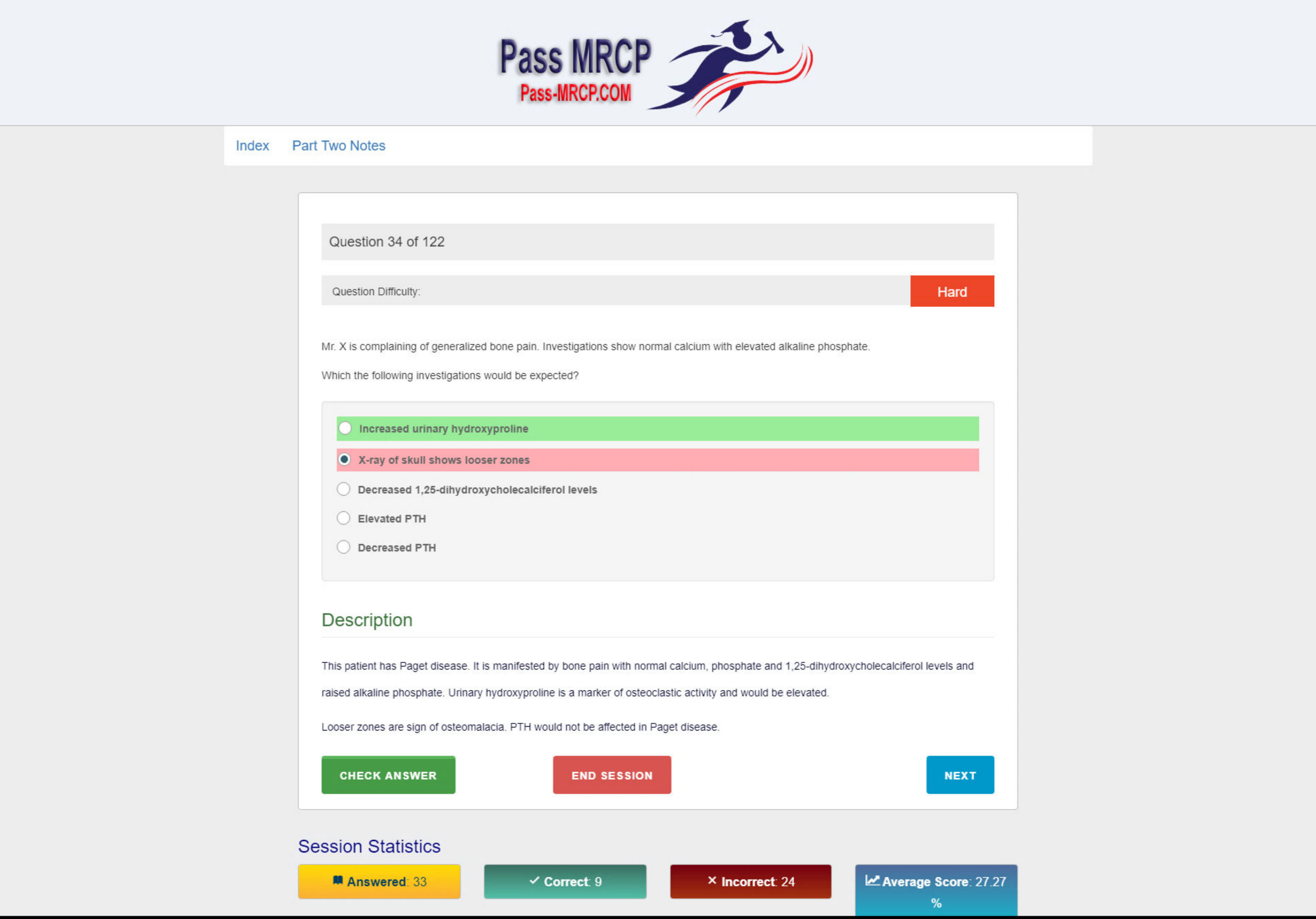
- ○ **Gout**
- ● **Psoriatic arthritis**
- ○ **Rheumatoid arthritis**
- ○ **Osteoarthritis**
- ○ **Osteonecrosis**

Description

Osteoarthritis is the most common type of joint disease caused by degenerative disorder arising from the breakdown of the hyaline cartilage and also the subchondral bone and synovium. It is manifested by:

- Deep, achy joint pain exacerbated by extensive use (the primary symptom)
- Reduced range of motion with crepitus
- Stiffness during rest
- Inflammatory changes are typically absent (no morning stiffness)

X-ray findings shown in the image include decrease of joint space, subchondral sclerosis and cysts and osteophytes formation at joint margins



Question 34 of 122

Question Difficulty: **Hard**

Mr. X is complaining of generalized bone pain. Investigations show normal calcium with elevated alkaline phosphate.

Which the following investigations would be expected?

- ○ **Increased urinary hydroxyproline**
- ● **X-ray of skull shows looser zones**
- ○ **Decreased 1,25-dihydroxycholecalciferol levels**
- ○ **Elevated PTH**
- ○ **Decreased PTH**

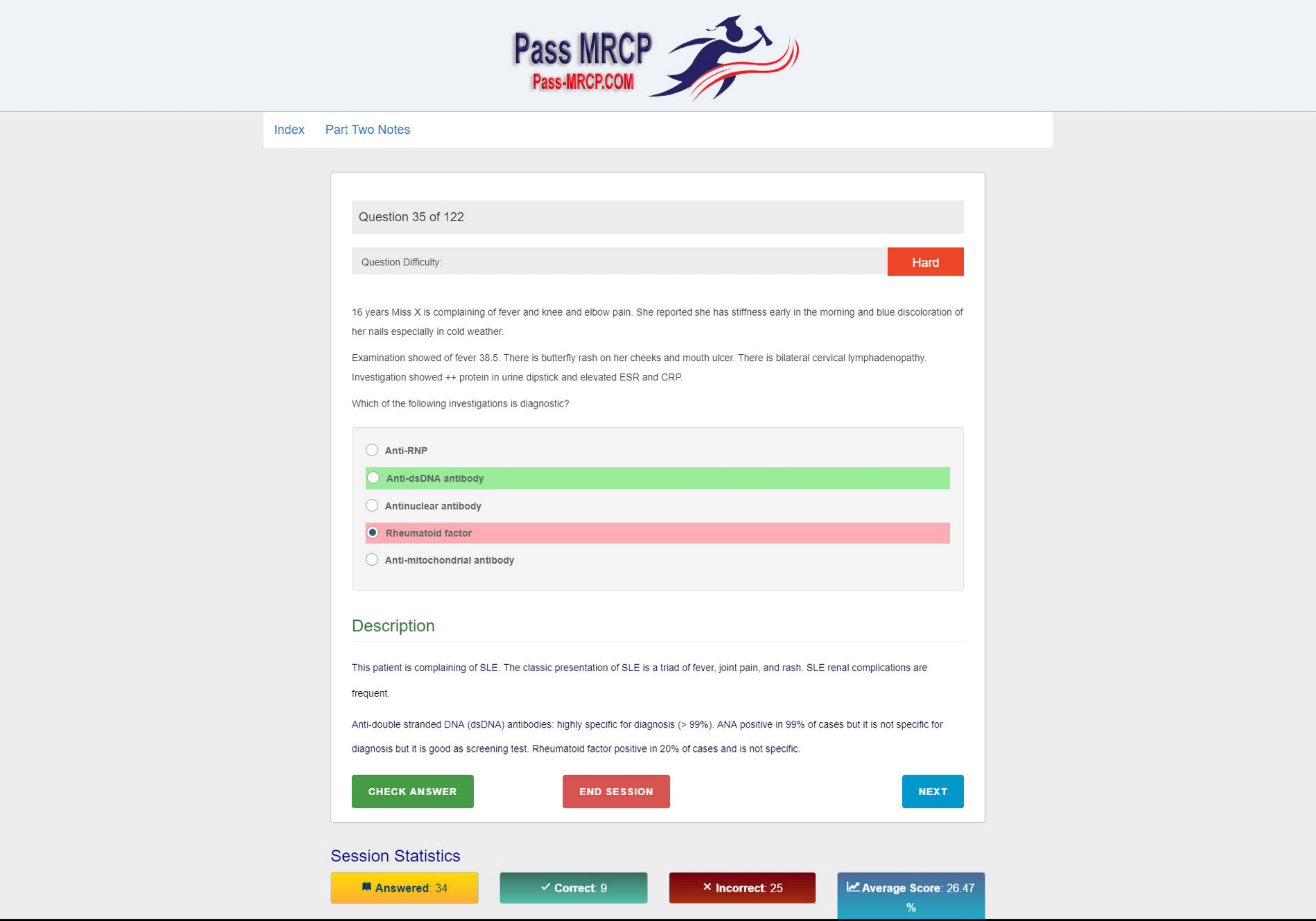
Description

This patient has Paget disease. It is manifested by bone pain with normal calcium, phosphate and 1,25-dihydroxycholecalciferol levels and raised alkaline phosphate. Urinary hydroxyproline is a marker of osteoclastic activity and would be elevated.

Looser zones are sign of osteomalacia. PTH would not be affected in Paget disease.

Session Statistics

Answered: 33
✓ **Correct**: 9
✕ **Incorrect**: 24
Average Score: 27.27 %



Question 35 of 122

Question Difficulty: Hard

16 years Miss X is complaining of fever and knee and elbow pain. She reported she has stiffness early in the morning and blue discoloration of her nails especially in cold weather.

Examination showed of fever 38.5. There is butterfly rash on her cheeks and mouth ulcer. There is bilateral cervical lymphadenopathy. Investigation showed ++ protein in urine dipstick and elevated ESR and CRP.

Which of the following investigations is diagnostic?

○ **Anti-RNP**
○ **Anti-dsDNA antibody**
○ **Antinuclear antibody**
● **Rheumatoid factor**
○ **Anti-mitochondrial antibody**

Description

This patient is complaining of SLE. The classic presentation of SLE is a triad of fever, joint pain, and rash. SLE renal complications are frequent.

Anti-double stranded DNA (dsDNA) antibodies: highly specific for diagnosis (> 99%). ANA positive in 99% of cases but it is not specific for diagnosis but it is good as screening test. Rheumatoid factor positive in 20% of cases and is not specific.

Session Statistics

Answered: 34
✓ **Correct**: 9
✕ **Incorrect**: 25
Average Score: 26.47 %

Question 36 of 122

Question Difficulty: **Hard**

Mr. X is admitted due to exertional dyspnea and wheezing. Examination shows right foot drop and purpuric rash over his abdomen. Investigations show:

Hemoglobin	8 g/dL	(13.5-17.5 g/dL)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Eosinophils	1.6 X10 9 /L	(0.04-0.4 x 10 9 /L)
Serum creatinine	102 mmol/L	(53-106 mmol/L)
ESR	88 1st hour	
pANCA	Positive	
cANCA	Negative	

What is the management of choice?

● **Cyclophosphamide**
○ **Plasmapheresis**
○ **High dose prednisolone**
○ **IV antibiotics**
○ **Methotrexate**

Description

This patient has Churg-Strauss syndrome. It is an ANCA associated small-medium vessel vasculitis. It is slightly more common males in 4th decade. Asthma is found in 97% of cases. Other manifestations include:

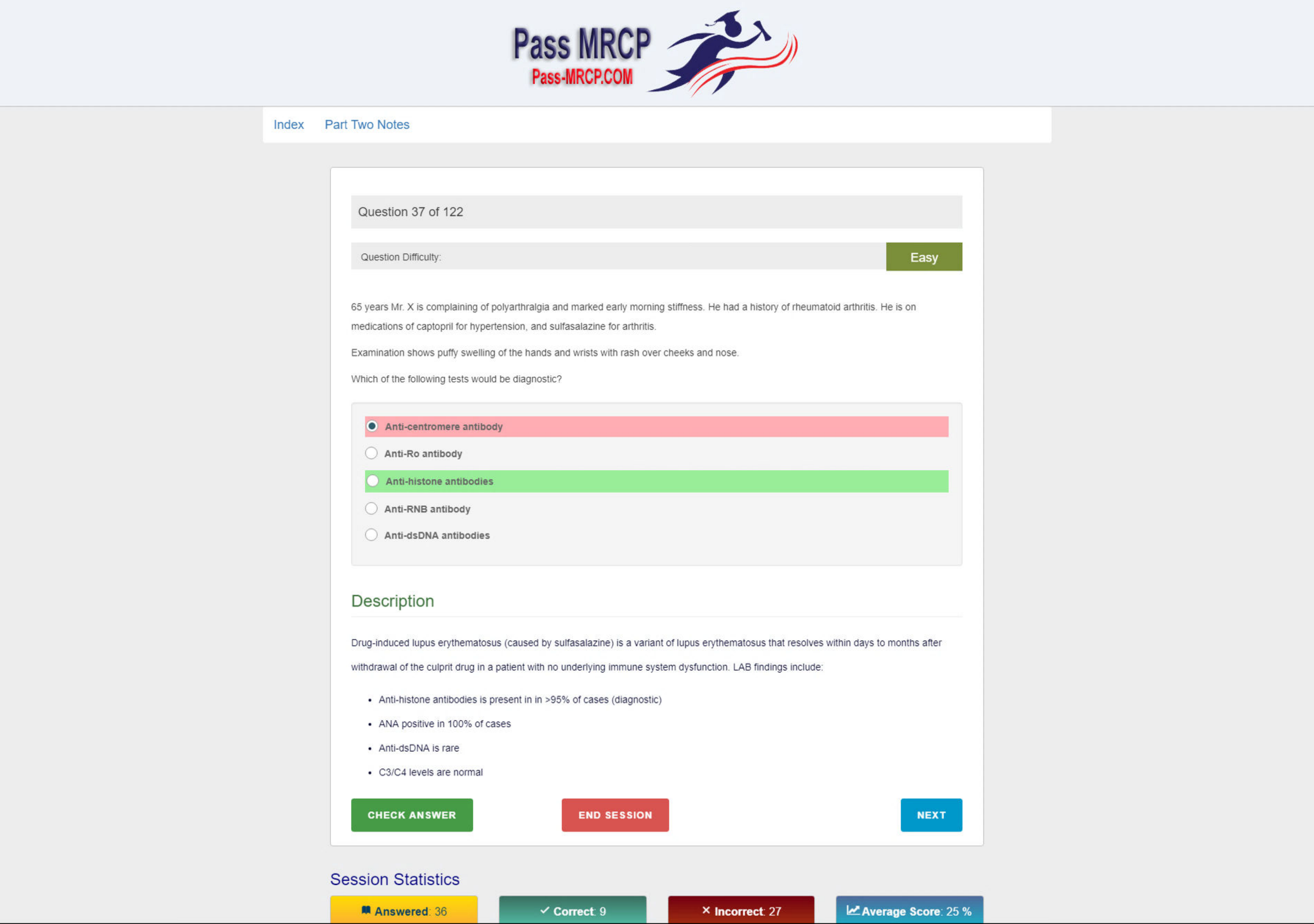
- Cough and hemoptysis
- Paranasal sinusitis
- Mononeuritis multiplex
- Arthralgia
- Nodules and purpura on the skin
- Blood eosinophilia
- CXR shows pulmonary infiltrates

P-ANCA is positive in 60% of cases. Corticosteroids are the mainstay management; cytotoxic drugs are indicated for resistant cases.

CHECK ANSWER   END SESSION   NEXT

Session Statistics

Answered: 35   ✓ **Correct**: 9   ✕ **Incorrect**: 26   **Average Score**: 25.71 %



Question 37 of 122

Question Difficulty: Easy

65 years Mr. X is complaining of polyarthralgia and marked early morning stiffness. He had a history of rheumatoid arthritis. He is on medications of captopril for hypertension, and sulfasalazine for arthritis.

Examination shows puffy swelling of the hands and wrists with rash over cheeks and nose.

Which of the following tests would be diagnostic?

● **Anti-centromere antibody**
○ **Anti-Ro antibody**
○ **Anti-histone antibodies**
○ **Anti-RNB antibody**
○ **Anti-dsDNA antibodies**

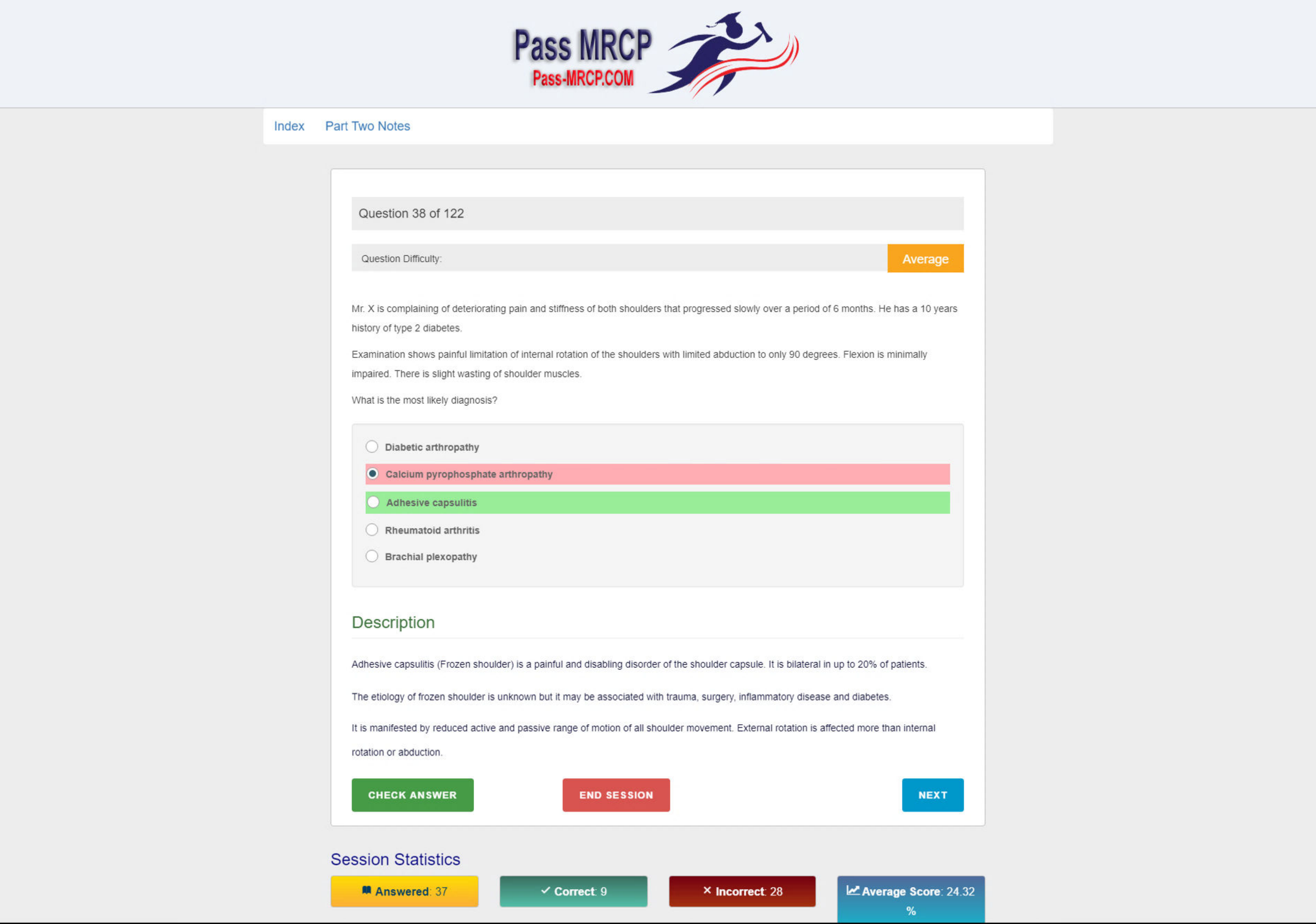
Description

Drug-induced lupus erythematosus (caused by sulfasalazine) is a variant of lupus erythematosus that resolves within days to months after withdrawal of the culprit drug in a patient with no underlying immune system dysfunction. LAB findings include:

- Anti-histone antibodies is present in in >95% of cases (diagnostic)
- ANA positive in 100% of cases
- Anti-dsDNA is rare
- C3/C4 levels are normal

Session Statistics

Answered: 36
✓ **Correct**: 9
× **Incorrect**: 27
Average Score: 25 %



Question 38 of 122

Question Difficulty: Average

Mr. X is complaining of deteriorating pain and stiffness of both shoulders that progressed slowly over a period of 6 months. He has a 10 years history of type 2 diabetes.

Examination shows painful limitation of internal rotation of the shoulders with limited abduction to only 90 degrees. Flexion is minimally impaired. There is slight wasting of shoulder muscles.

What is the most likely diagnosis?

- ○ **Diabetic arthropathy**
- ● **Calcium pyrophosphate arthropathy**
- ○ **Adhesive capsulitis**
- ○ **Rheumatoid arthritis**
- ○ **Brachial plexopathy**

Description

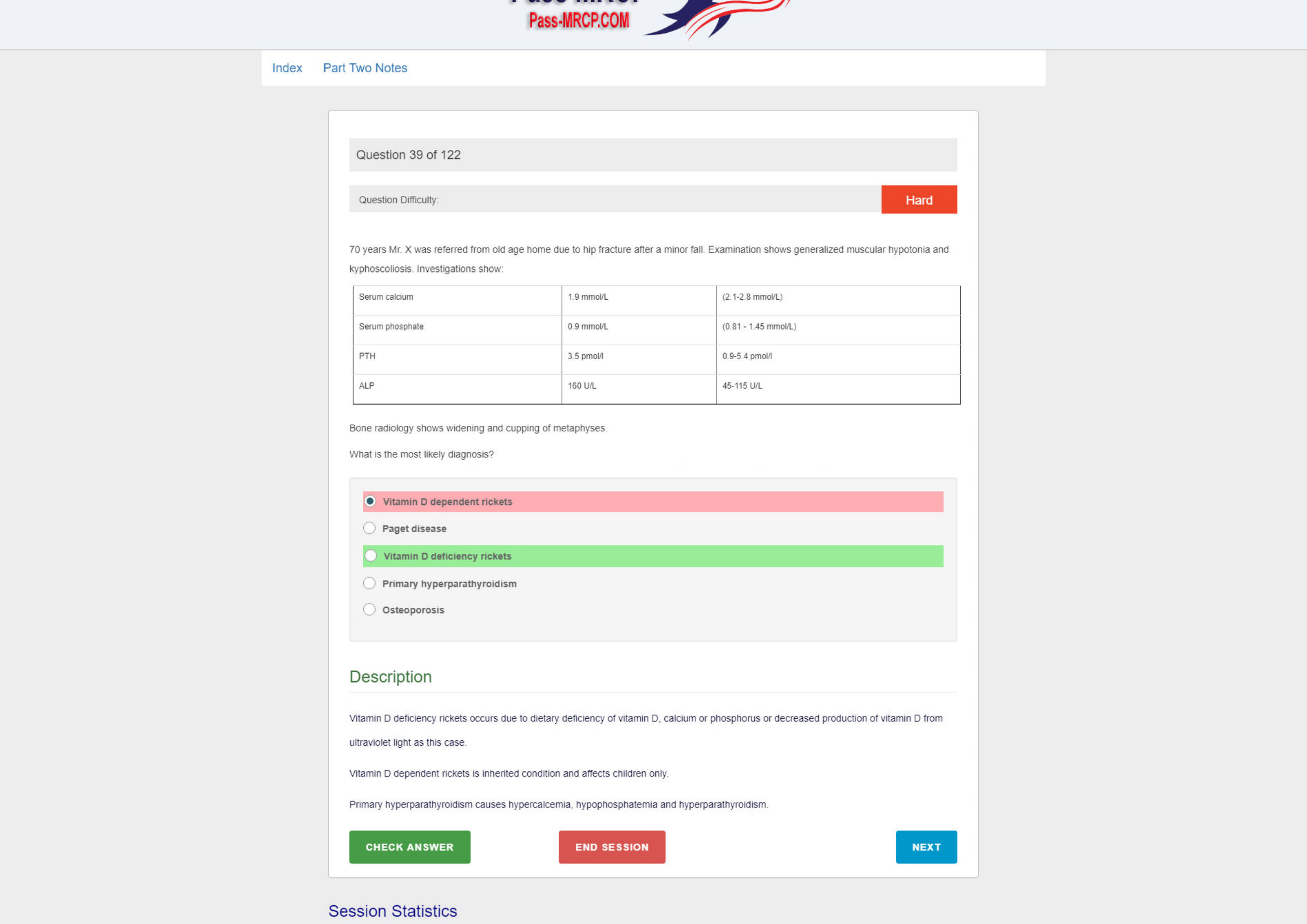
Adhesive capsulitis (Frozen shoulder) is a painful and disabling disorder of the shoulder capsule. It is bilateral in up to 20% of patients.

The etiology of frozen shoulder is unknown but it may be associated with trauma, surgery, inflammatory disease and diabetes.

It is manifested by reduced active and passive range of motion of all shoulder movement. External rotation is affected more than internal rotation or abduction.

Session Statistics

Answered: 37
✓ **Correct**: 9
✕ **Incorrect**: 28
Average Score: 24.32 %



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Question 39 of 122

Question Difficulty: **Hard**

70 years Mr. X was referred from old age home due to hip fracture after a minor fall. Examination shows generalized muscular hypotonia and kyphoscoliosis. Investigations show:

Serum calcium	1.9 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	0.9 mmol/L	(0.81 - 1.45 mmol/L)
PTH	3.5 pmol/l	0.9-5.4 pmol/l
ALP	160 U/L	45-115 U/L

Bone radiology shows widening and cupping of metaphyses.

What is the most likely diagnosis?

- ● **Vitamin D dependent rickets**
- ○ **Paget disease**
- ○ **Vitamin D deficiency rickets**
- ○ **Primary hyperparathyroidism**
- ○ **Osteoporosis**

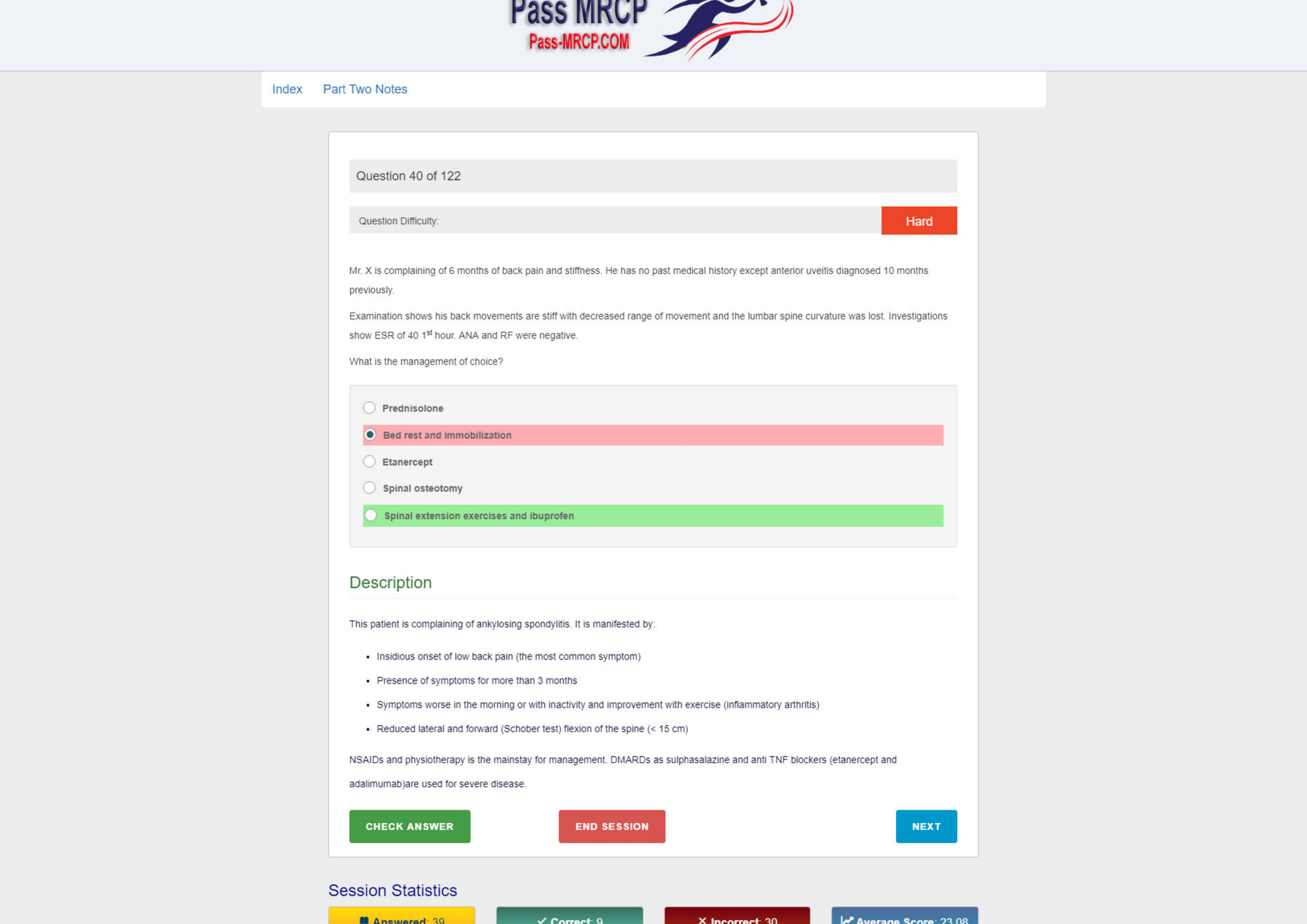
Description

Vitamin D deficiency rickets occurs due to dietary deficiency of vitamin D, calcium or phosphorus or decreased production of vitamin D from ultraviolet light as this case.

Vitamin D dependent rickets is inherited condition and affects children only.

Primary hyperparathyroidism causes hypercalcemia, hypophosphatemia and hyperparathyroidism.

Session Statistics



Question 40 of 122

Question Difficulty: Hard

Mr. X is complaining of 6 months of back pain and stiffness. He has no past medical history except anterior uveitis diagnosed 10 months previously.

Examination shows his back movements are stiff with decreased range of movement and the lumbar spine curvature was lost. Investigations show ESR of 40 1st hour. ANA and RF were negative.

What is the management of choice?

○ Prednisolone
● Bed rest and immobilization
○ Etanercept
○ Spinal osteotomy
○ Spinal extension exercises and ibuprofen

Description

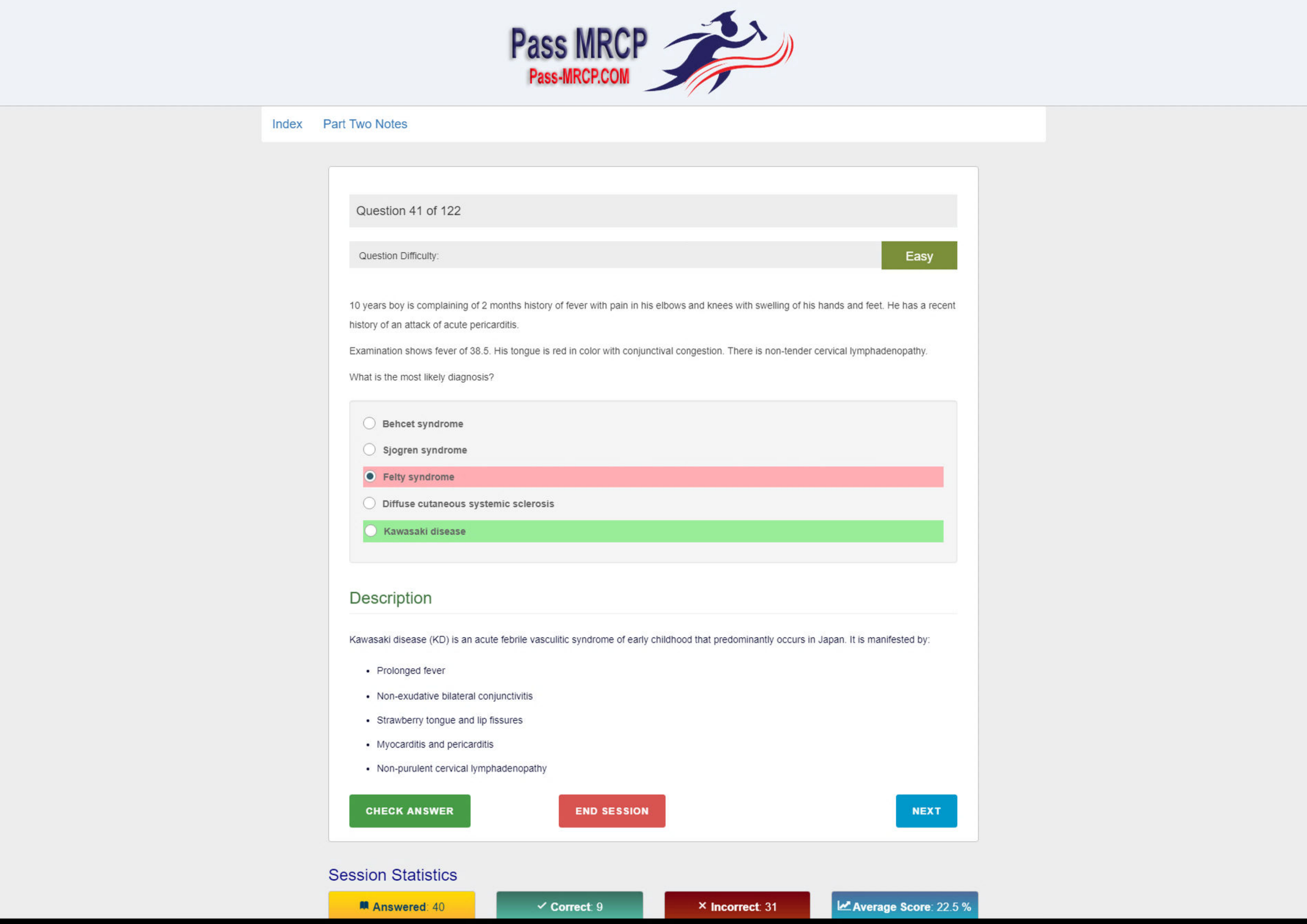
This patient is complaining of ankylosing spondylitis. It is manifested by:

- Insidious onset of low back pain (the most common symptom)
- Presence of symptoms for more than 3 months
- Symptoms worse in the morning or with inactivity and improvement with exercise (inflammatory arthritis)
- Reduced lateral and forward (Schober test) flexion of the spine (< 15 cm)

NSAIDs and physiotherapy is the mainstay for management. DMARDs as sulphasalazine and anti TNF blockers (etanercept and adalimumab)are used for severe disease.

Session Statistics

Answered: 39
✓ Correct: 9
✕ Incorrect: 30
Average Score: 23.08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Part Two Notes

Question 41 of 122

Question Difficulty: **Easy**

10 years boy is complaining of 2 months history of fever with pain in his elbows and knees with swelling of his hands and feet. He has a recent history of an attack of acute pericarditis.

Examination shows fever of 38.5. His tongue is red in color with conjunctival congestion. There is non-tender cervical lymphadenopathy.

What is the most likely diagnosis?

○ **Behcet syndrome**
○ **Sjogren syndrome**
● **Felty syndrome**
○ **Diffuse cutaneous systemic sclerosis**
○ **Kawasaki disease**

Description

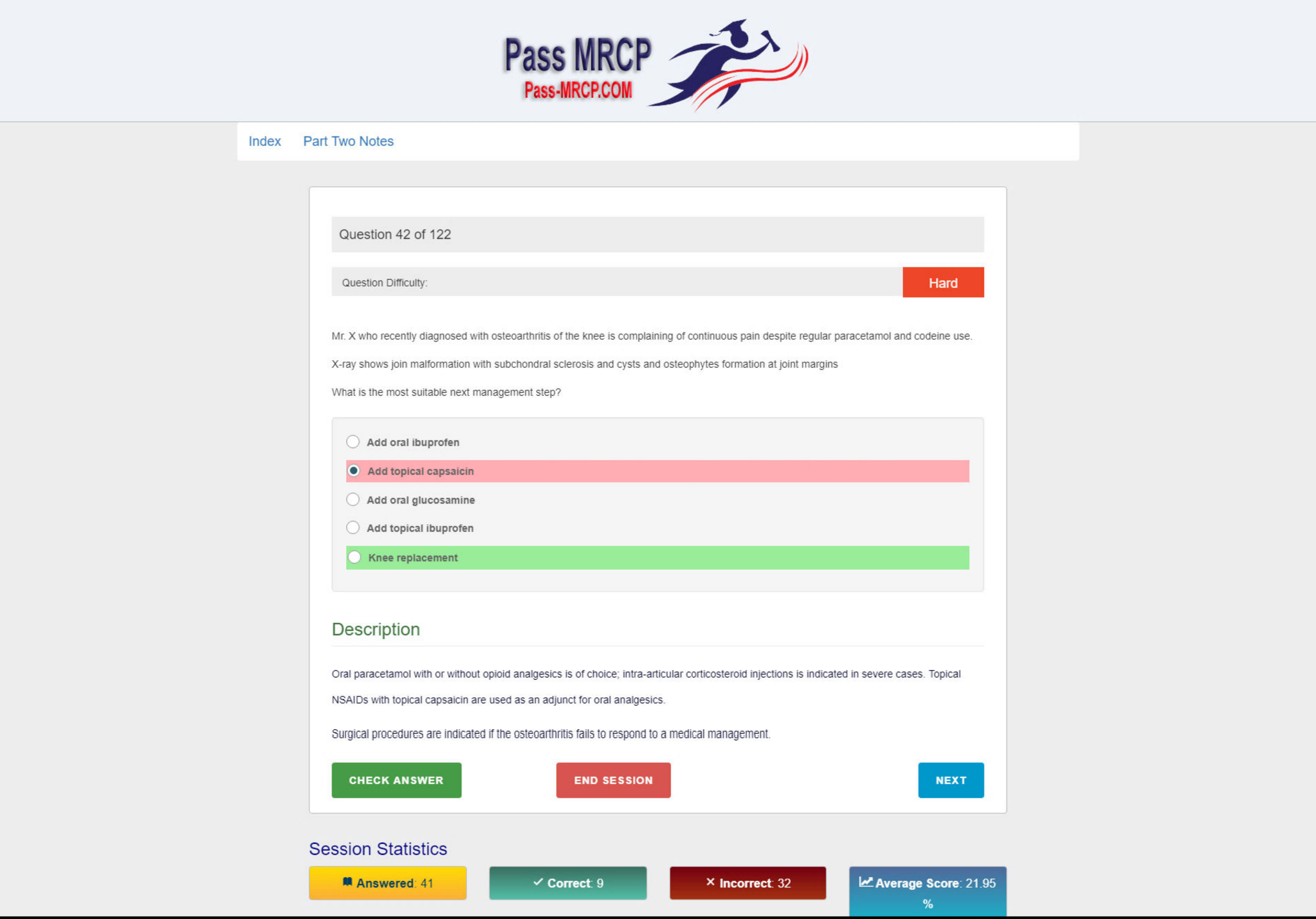
Kawasaki disease (KD) is an acute febrile vasculitic syndrome of early childhood that predominantly occurs in Japan. It is manifested by:

- Prolonged fever
- Non-exudative bilateral conjunctivitis
- Strawberry tongue and lip fissures
- Myocarditis and pericarditis
- Non-purulent cervical lymphadenopathy

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 40
✓ Correct: 9
✕ Incorrect: 31
Average Score: 22.5 %



Question 42 of 122

Question Difficulty: Hard

Mr. X who recently diagnosed with osteoarthritis of the knee is complaining of continuous pain despite regular paracetamol and codeine use.

X-ray shows join malformation with subchondral sclerosis and cysts and osteophytes formation at joint margins

What is the most suitable next management step?

- ○ Add oral ibuprofen
- ● Add topical capsaicin
- ○ Add oral glucosamine
- ○ Add topical ibuprofen
- ○ Knee replacement

Description

Oral paracetamol with or without opioid analgesics is of choice; intra-articular corticosteroid injections is indicated in severe cases. Topical NSAIDs with topical capsaicin are used as an adjunct for oral analgesics.

Surgical procedures are indicated if the osteoarthritis fails to respond to a medical management.

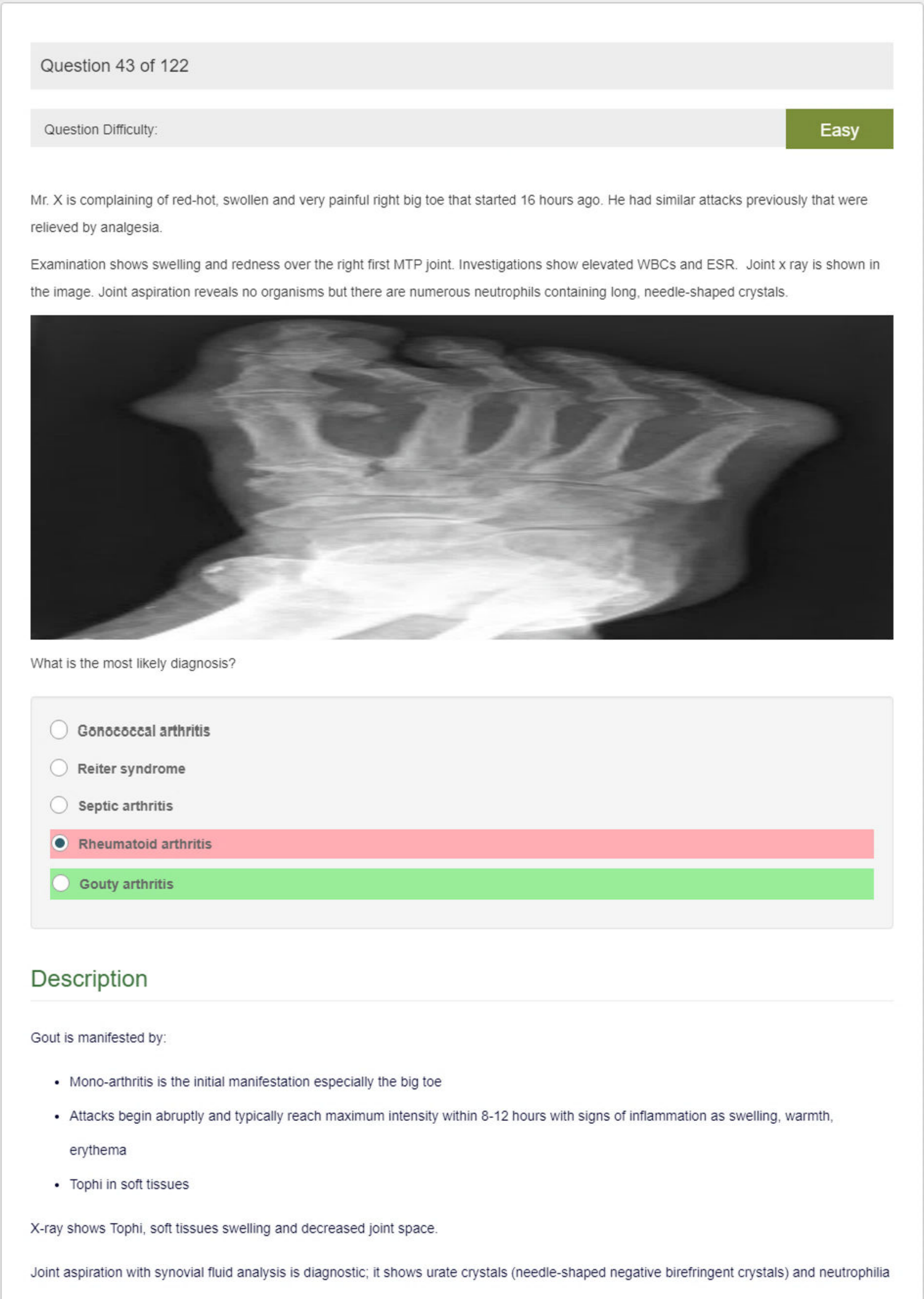
Session Statistics

Answered: 41

✓ Correct: 9

✕ Incorrect: 32

Average Score: 21.95 %



Question 43 of 122

Question Difficulty: Easy

Mr. X is complaining of red-hot, swollen and very painful right big toe that started 16 hours ago. He had similar attacks previously that were relieved by analgesia.

Examination shows swelling and redness over the right first MTP joint. Investigations show elevated WBCs and ESR. Joint x ray is shown in the image. Joint aspiration reveals no organisms but there are numerous neutrophils containing long, needle-shaped crystals.

What is the most likely diagnosis?

○ Gonococcal arthritis
○ Reiter syndrome
○ Septic arthritis
● Rheumatoid arthritis
○ Gouty arthritis

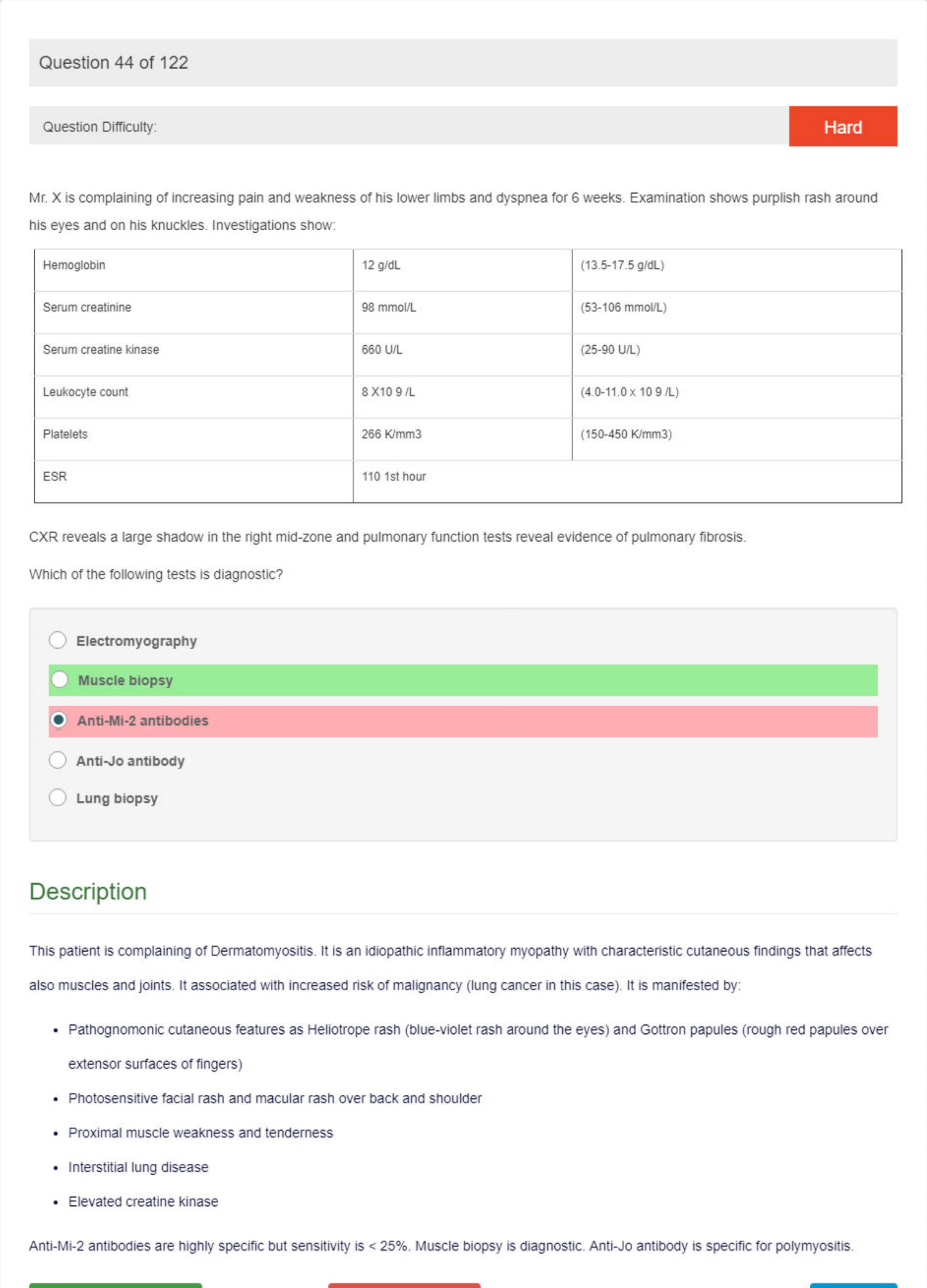
Description

Gout is manifested by:

- Mono-arthritis is the initial manifestation especially the big toe
- Attacks begin abruptly and typically reach maximum intensity within 8-12 hours with signs of inflammation as swelling, warmth, erythema
- Tophi in soft tissues

X-ray shows Tophi, soft tissues swelling and decreased joint space.

Joint aspiration with synovial fluid analysis is diagnostic; it shows urate crystals (needle-shaped negative birefringent crystals) and neutrophilia



Question 44 of 122

Question Difficulty: **Hard**

Mr. X is complaining of increasing pain and weakness of his lower limbs and dyspnea for 6 weeks. Examination shows purplish rash around his eyes and on his knuckles. Investigations show:

Hemoglobin	12 g/dL	(13.5-17.5 g/dL)
Serum creatinine	98 mmol/L	(53-106 mmol/L)
Serum creatine kinase	660 U/L	(25-90 U/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	266 K/mm3	(150-450 K/mm3)
ESR	110 1st hour	

CXR reveals a large shadow in the right mid-zone and pulmonary function tests reveal evidence of pulmonary fibrosis.

Which of the following tests is diagnostic?

○ **Electromyography**

○ **Muscle biopsy**

● **Anti-Mi-2 antibodies**

○ **Anti-Jo antibody**

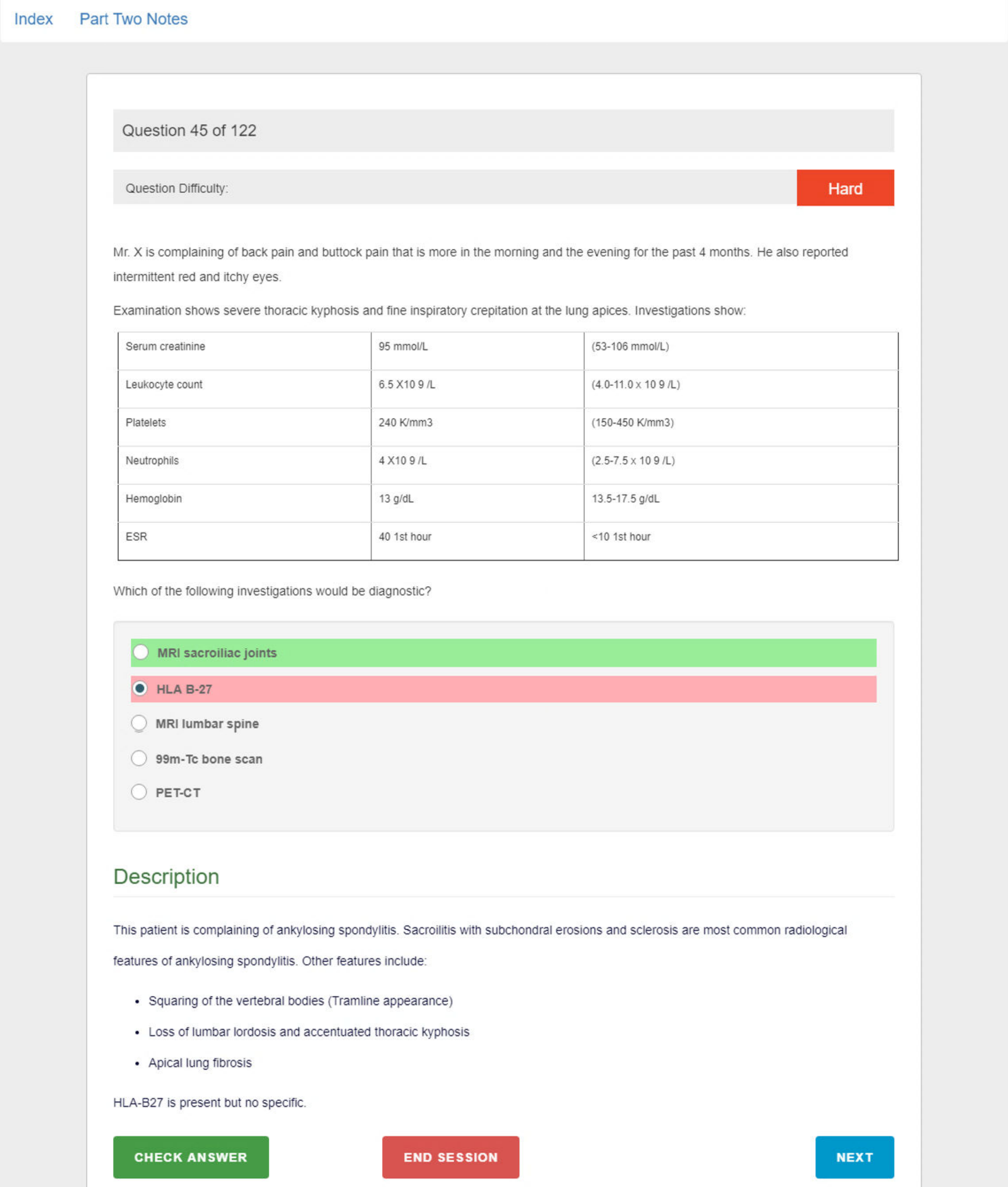
○ **Lung biopsy**

Description

This patient is complaining of Dermatomyositis. It is an idiopathic inflammatory myopathy with characteristic cutaneous findings that affects also muscles and joints. It associated with increased risk of malignancy (lung cancer in this case). It is manifested by:

- Pathognomonic cutaneous features as Heliotrope rash (blue-violet rash around the eyes) and Gottron papules (rough red papules over extensor surfaces of fingers)
- Photosensitive facial rash and macular rash over back and shoulder
- Proximal muscle weakness and tenderness
- Interstitial lung disease
- Elevated creatine kinase

Anti-Mi-2 antibodies are highly specific but sensitivity is < 25%. Muscle biopsy is diagnostic. Anti-Jo antibody is specific for polymyositis.



Question 45 of 122

Question Difficulty:

Mr. X is complaining of back pain and buttock pain that is more in the morning and the evening for the past 4 months. He also reported intermittent red and itchy eyes.

Examination shows severe thoracic kyphosis and fine inspiratory crepitation at the lung apices. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	6.5 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	240 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	40 1st hour	<10 1st hour

Which of the following investigations would be diagnostic?

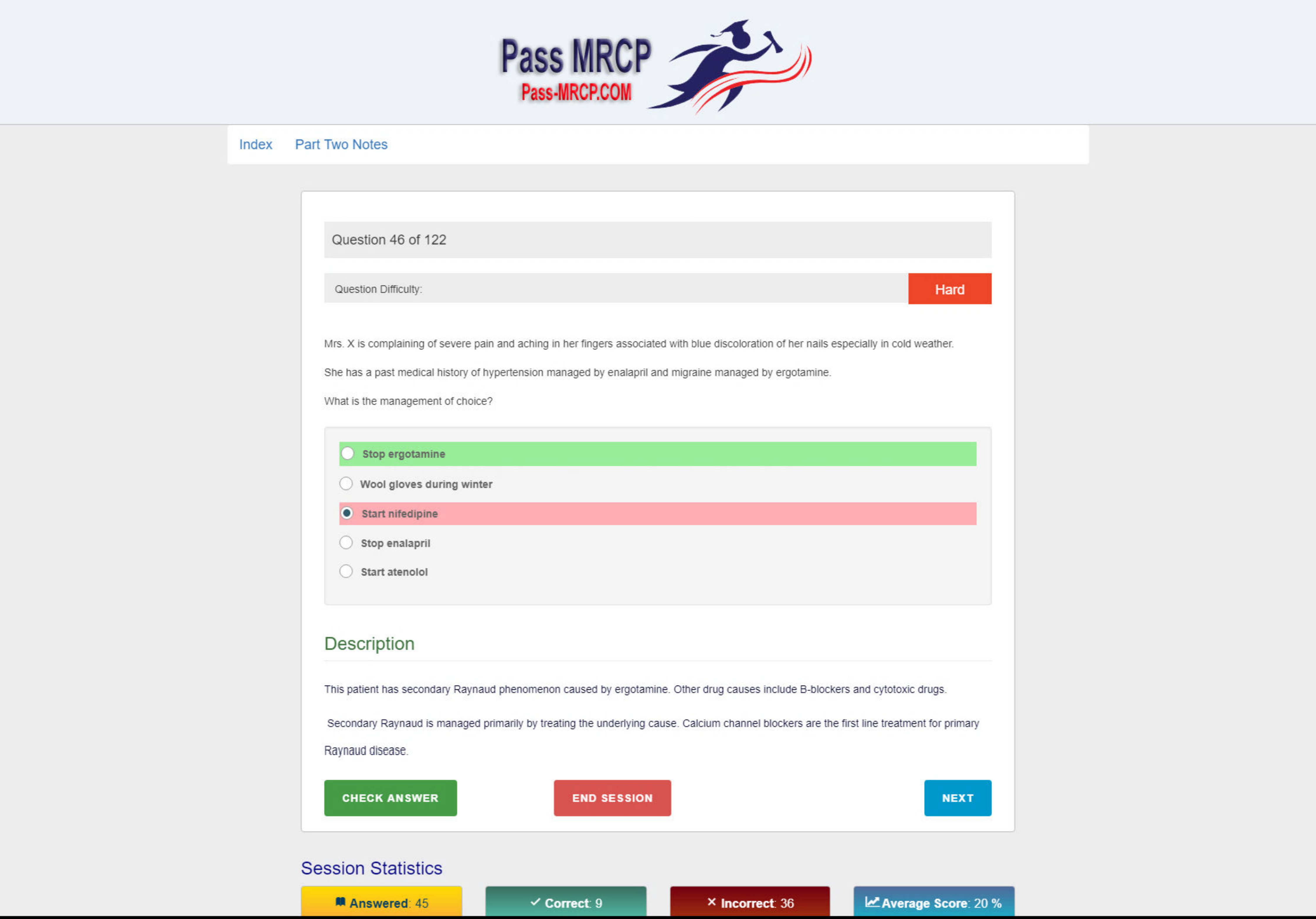
○ **MRI sacroiliac joints**
● **HLA B-27**
○ **MRI lumbar spine**
○ **99m-Tc bone scan**
○ **PET-CT**

Description

This patient is complaining of ankylosing spondylitis. Sacroilitis with subchondral erosions and sclerosis are most common radiological features of ankylosing spondylitis. Other features include:

- Squaring of the vertebral bodies (Tramline appearance)
- Loss of lumbar lordosis and accentuated thoracic kyphosis
- Apical lung fibrosis

HLA-B27 is present but no specific.



Question 46 of 122

Question Difficulty: **Hard**

Mrs. X is complaining of severe pain and aching in her fingers associated with blue discoloration of her nails especially in cold weather.

She has a past medical history of hypertension managed by enalapril and migraine managed by ergotamine.

What is the management of choice?

- ○ **Stop ergotamine**
- ○ **Wool gloves during winter**
- ● **Start nifedipine**
- ○ **Stop enalapril**
- ○ **Start atenolol**

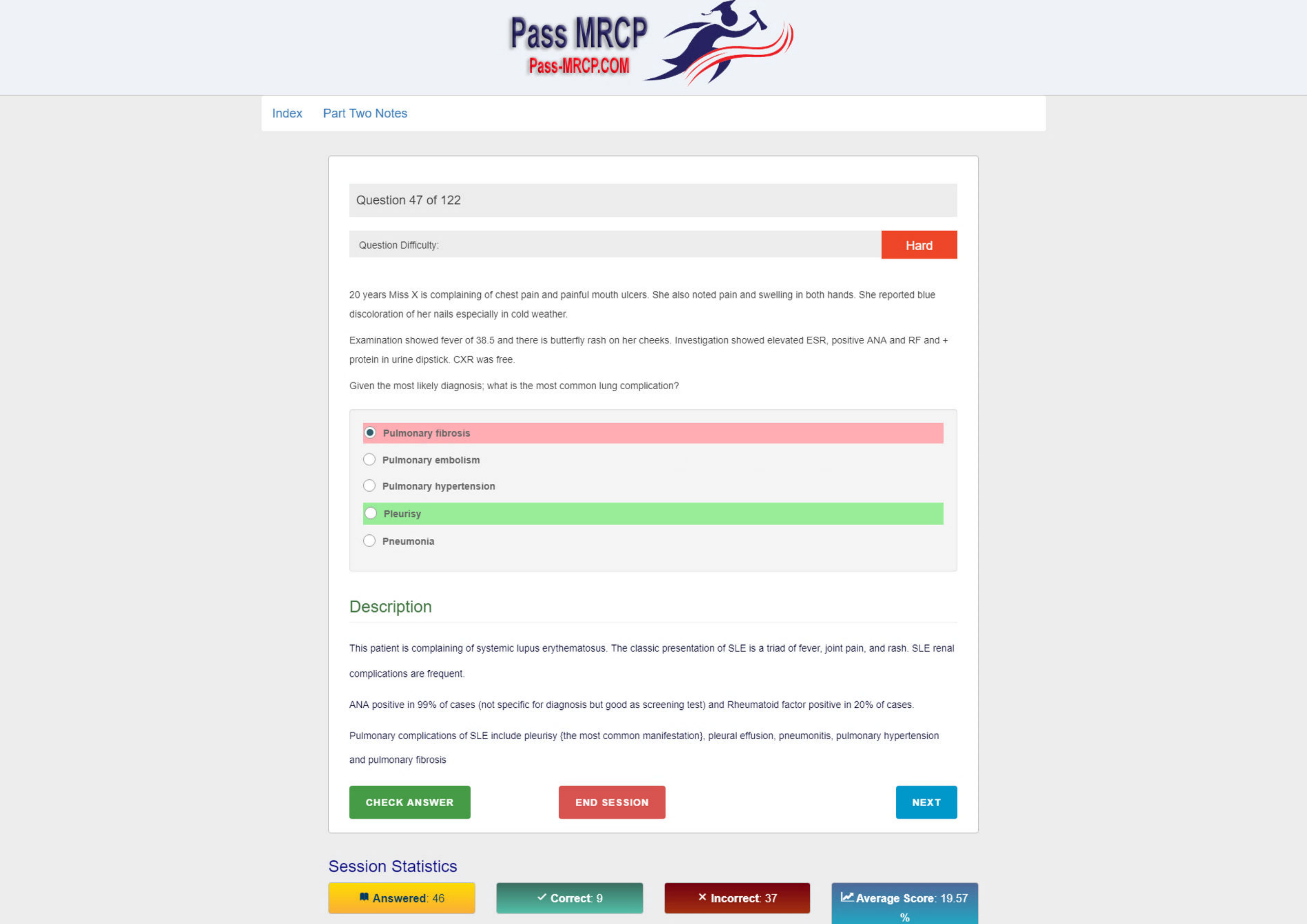
Description

This patient has secondary Raynaud phenomenon caused by ergotamine. Other drug causes include B-blockers and cytotoxic drugs.

Secondary Raynaud is managed primarily by treating the underlying cause. Calcium channel blockers are the first line treatment for primary Raynaud disease.

Session Statistics

Answered: 45
Correct: 9
Incorrect: 36
Average Score: 20 %



Question 47 of 122

Question Difficulty: **Hard**

20 years Miss X is complaining of chest pain and painful mouth ulcers. She also noted pain and swelling in both hands. She reported blue discoloration of her nails especially in cold weather.

Examination showed fever of 38.5 and there is butterfly rash on her cheeks. Investigation showed elevated ESR, positive ANA and RF and + protein in urine dipstick. CXR was free.

Given the most likely diagnosis; what is the most common lung complication?

- ● **Pulmonary fibrosis**
- ○ **Pulmonary embolism**
- ○ **Pulmonary hypertension**
- ○ **Pleurisy**
- ○ **Pneumonia**

Description

This patient is complaining of systemic lupus erythematosus. The classic presentation of SLE is a triad of fever, joint pain, and rash. SLE renal complications are frequent.

ANA positive in 99% of cases (not specific for diagnosis but good as screening test) and Rheumatoid factor positive in 20% of cases.

Pulmonary complications of SLE include pleurisy {the most common manifestation}, pleural effusion, pneumonitis, pulmonary hypertension and pulmonary fibrosis

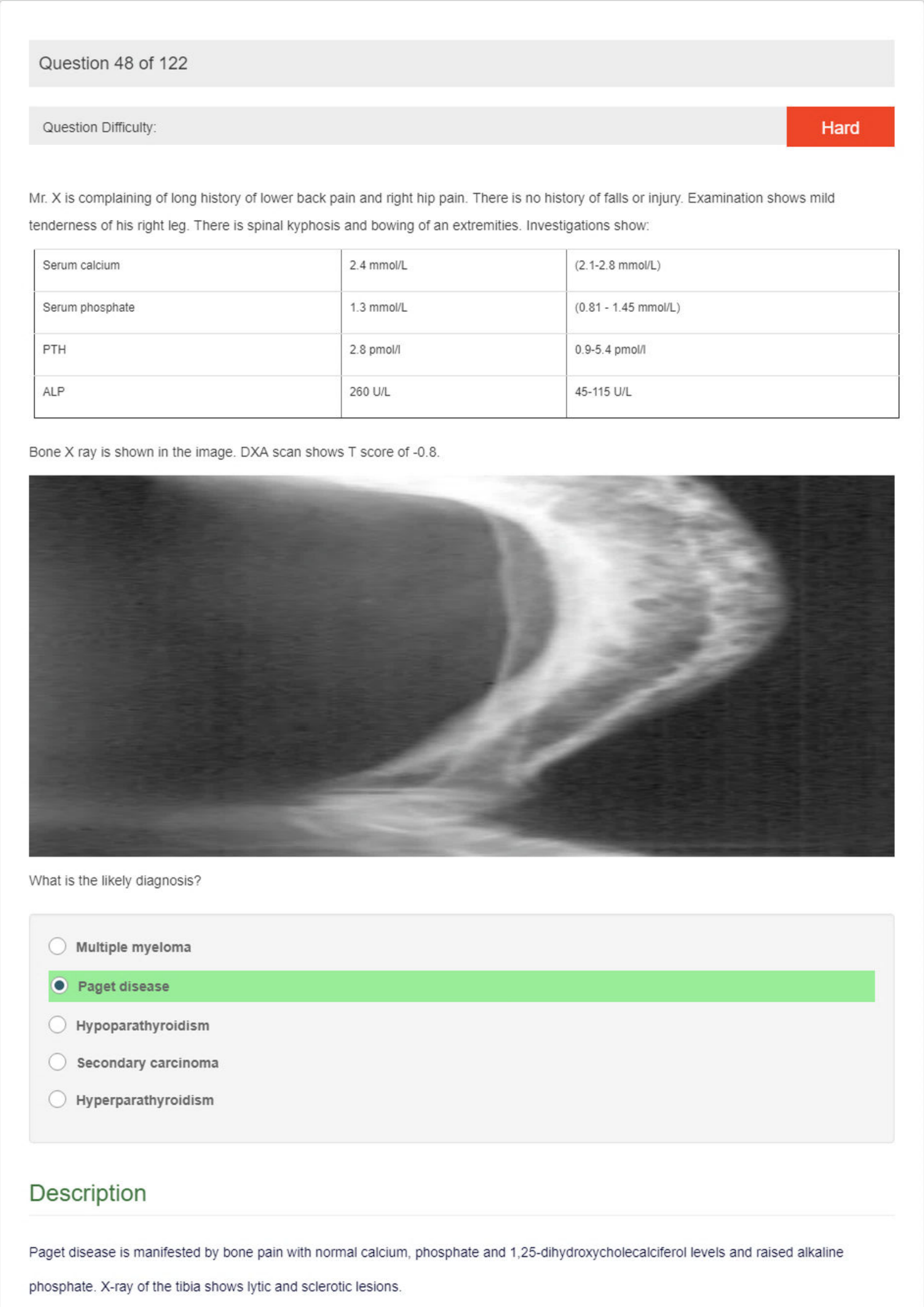
Session Statistics

Answered: 46

✓ **Correct**: 9

× **Incorrect**: 37

Average Score: 19.57 %



Question 48 of 122

Question Difficulty: **Hard**

Mr. X is complaining of long history of lower back pain and right hip pain. There is no history of falls or injury. Examination shows mild tenderness of his right leg. There is spinal kyphosis and bowing of an extremities. Investigations show:

Serum calcium	2.4 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	1.3 mmol/L	(0.81 - 1.45 mmol/L)
PTH	2.8 pmol/l	0.9-5.4 pmol/l
ALP	260 U/L	45-115 U/L

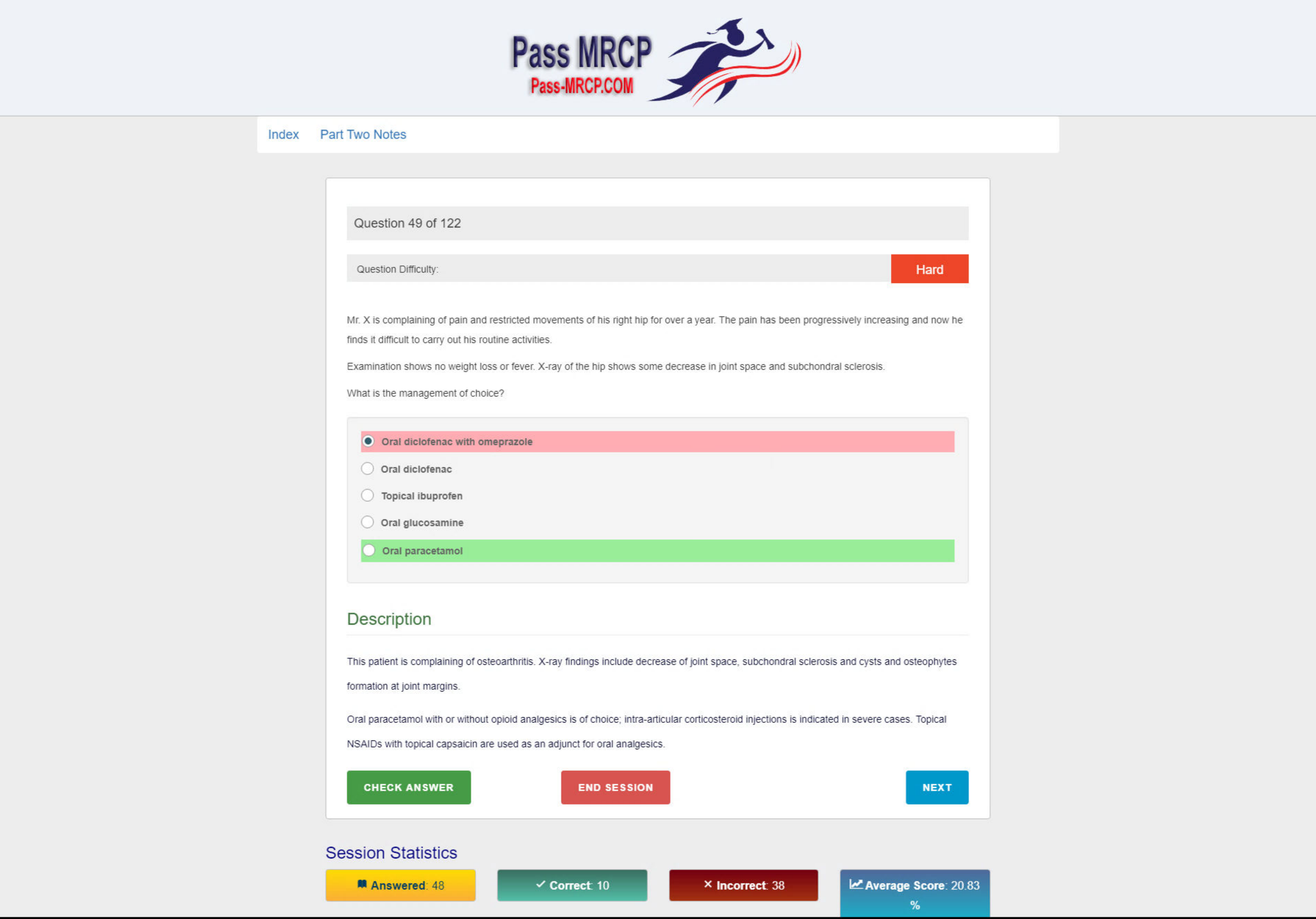
Bone X ray is shown in the image. DXA scan shows T score of -0.8.

What is the likely diagnosis?

- ○ **Multiple myeloma**
- ● **Paget disease**
- ○ **Hypoparathyroidism**
- ○ **Secondary carcinoma**
- ○ **Hyperparathyroidism**

Description

Paget disease is manifested by bone pain with normal calcium, phosphate and 1,25-dihydroxycholecalciferol levels and raised alkaline phosphate. X-ray of the tibia shows lytic and sclerotic lesions.



Question 49 of 122

Question Difficulty: **Hard**

Mr. X is complaining of pain and restricted movements of his right hip for over a year. The pain has been progressively increasing and now he finds it difficult to carry out his routine activities.

Examination shows no weight loss or fever. X-ray of the hip shows some decrease in joint space and subchondral sclerosis.

What is the management of choice?

- ● **Oral diclofenac with omeprazole**
- ○ **Oral diclofenac**
- ○ **Topical ibuprofen**
- ○ **Oral glucosamine**
- ○ **Oral paracetamol**

Description

This patient is complaining of osteoarthritis. X-ray findings include decrease of joint space, subchondral sclerosis and cysts and osteophytes formation at joint margins.

Oral paracetamol with or without opioid analgesics is of choice; intra-articular corticosteroid injections is indicated in severe cases. Topical NSAIDs with topical capsaicin are used as an adjunct for oral analgesics.

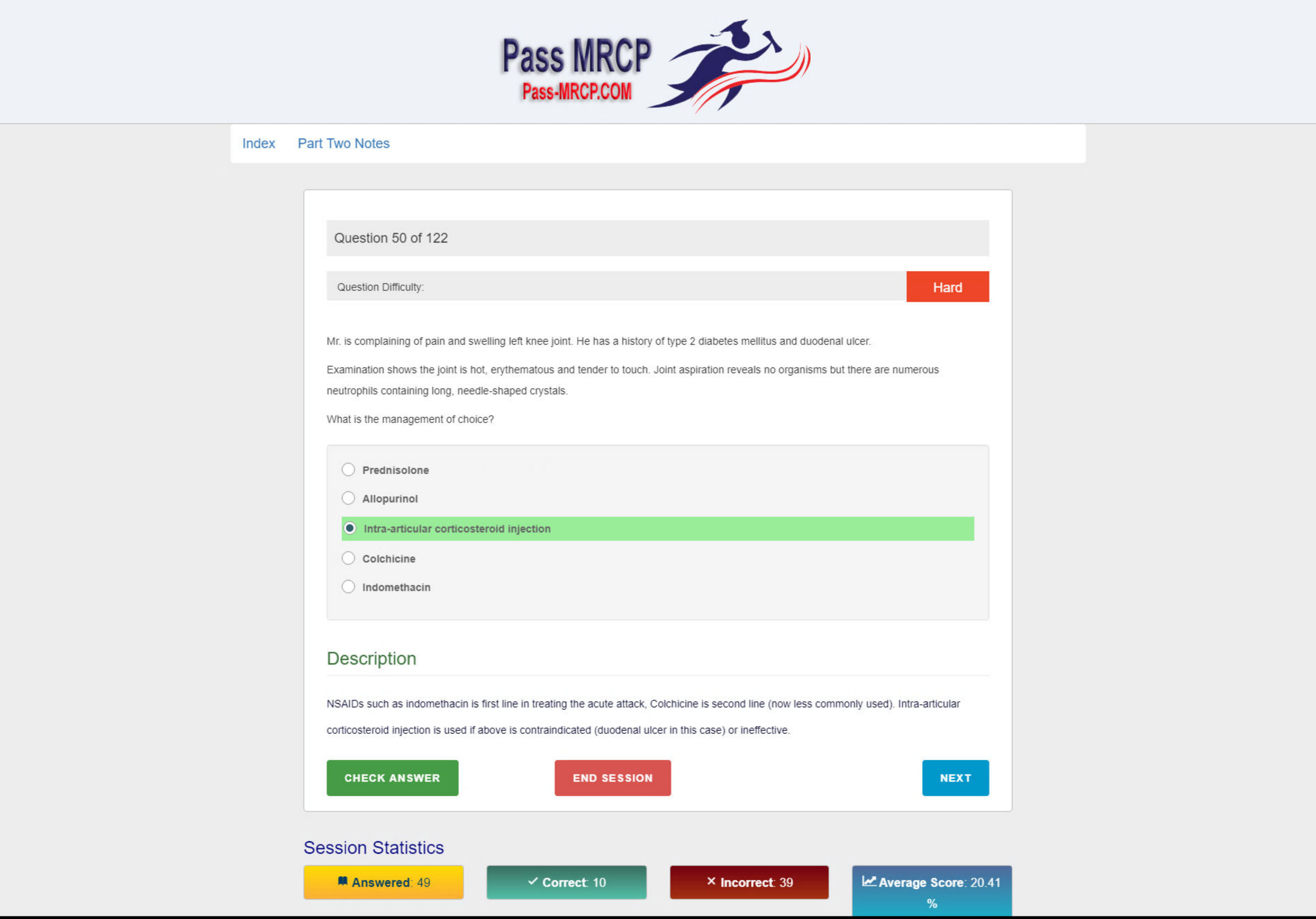
Session Statistics

Answered: 48

✓ **Correct**: 10

✕ **Incorrect**: 38

Average Score: 20.83 %



Question 50 of 122

Question Difficulty: **Hard**

Mr. is complaining of pain and swelling left knee joint. He has a history of type 2 diabetes mellitus and duodenal ulcer.

Examination shows the joint is hot, erythematous and tender to touch. Joint aspiration reveals no organisms but there are numerous neutrophils containing long, needle-shaped crystals.

What is the management of choice?

- ○ **Prednisolone**
- ○ **Allopurinol**
- ● **Intra-articular corticosteroid injection**
- ○ **Colchicine**
- ○ **Indomethacin**

Description

NSAIDs such as indomethacin is first line in treating the acute attack, Colchicine is second line (now less commonly used). Intra-articular corticosteroid injection is used if above is contraindicated (duodenal ulcer in this case) or ineffective.

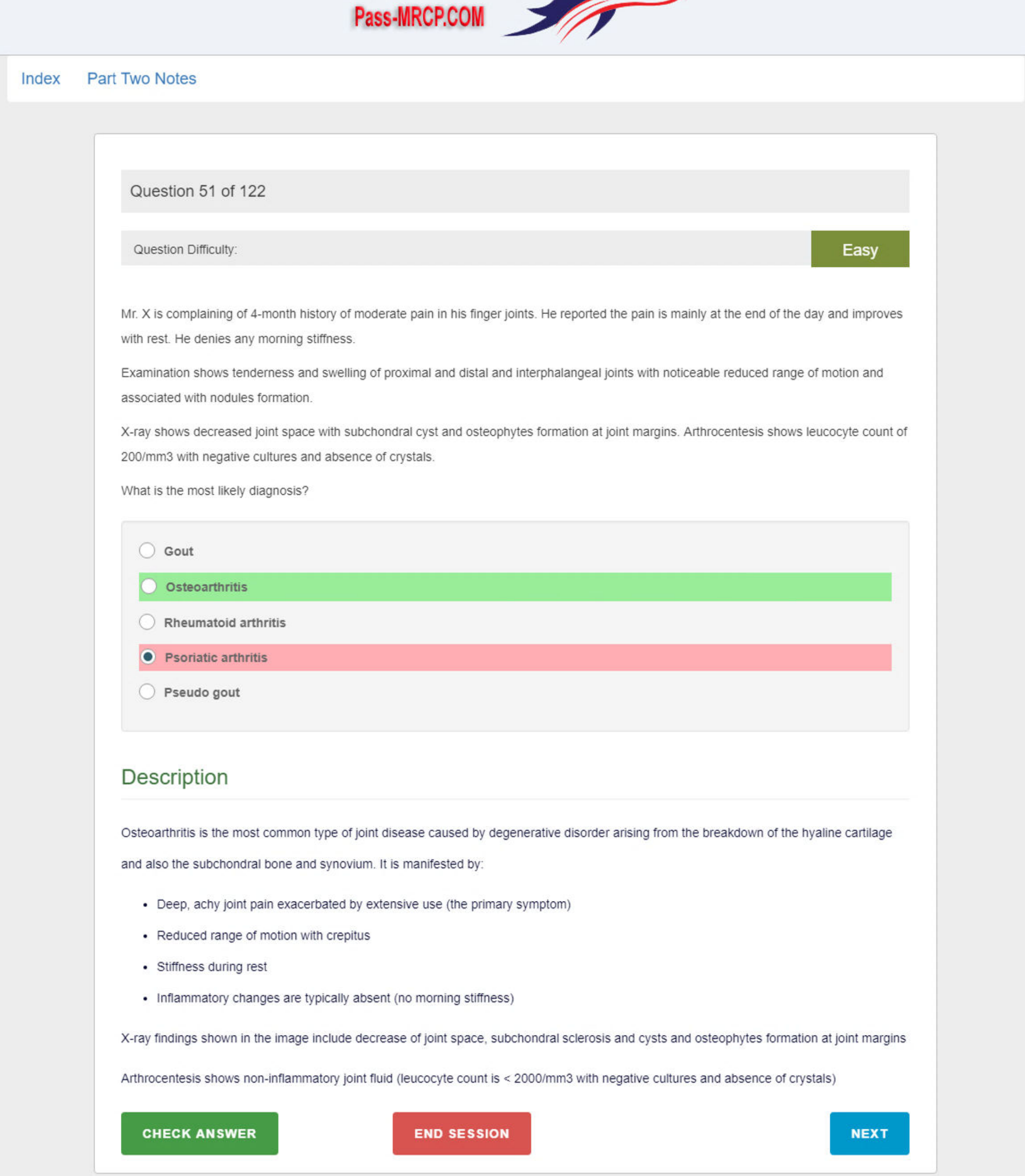
Session Statistics

Answered: 49

✓ **Correct**: 10

✕ **Incorrect**: 39

Average Score: 20.41 %



Question 51 of 122

Question Difficulty: **Easy**

Mr. X is complaining of 4-month history of moderate pain in his finger joints. He reported the pain is mainly at the end of the day and improves with rest. He denies any morning stiffness.

Examination shows tenderness and swelling of proximal and distal and interphalangeal joints with noticeable reduced range of motion and associated with nodules formation.

X-ray shows decreased joint space with subchondral cyst and osteophytes formation at joint margins. Arthrocentesis shows leucocyte count of 200/mm3 with negative cultures and absence of crystals.

What is the most likely diagnosis?

○ **Gout**

○ **Osteoarthritis**

○ **Rheumatoid arthritis**

● **Psoriatic arthritis**

○ **Pseudo gout**

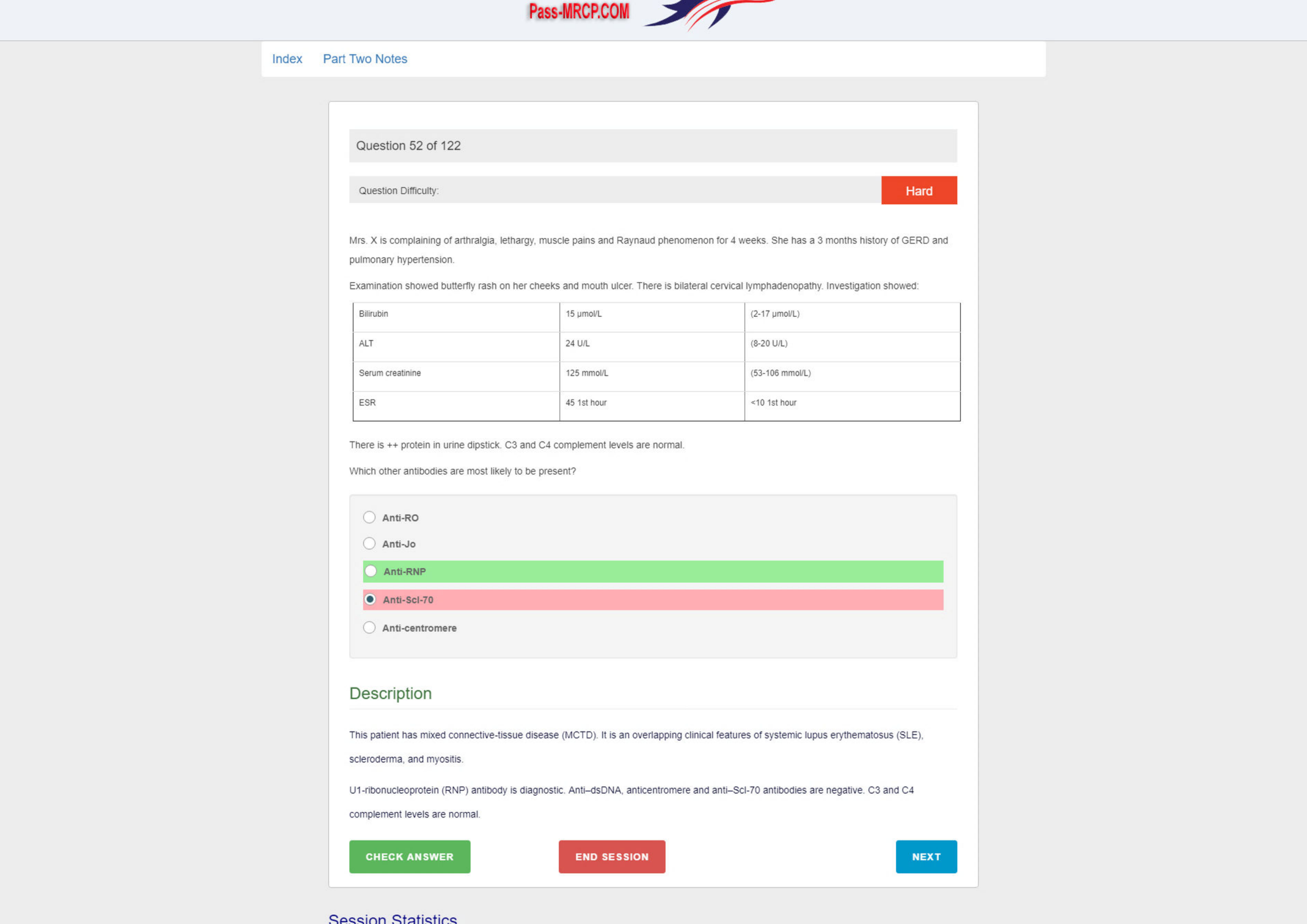
Description

Osteoarthritis is the most common type of joint disease caused by degenerative disorder arising from the breakdown of the hyaline cartilage and also the subchondral bone and synovium. It is manifested by:

- Deep, achy joint pain exacerbated by extensive use (the primary symptom)
- Reduced range of motion with crepitus
- Stiffness during rest
- Inflammatory changes are typically absent (no morning stiffness)

X-ray findings shown in the image include decrease of joint space, subchondral sclerosis and cysts and osteophytes formation at joint margins

Arthrocentesis shows non-inflammatory joint fluid (leucocyte count is < 2000/mm3 with negative cultures and absence of crystals)



Question 52 of 122

Question Difficulty: **Hard**

Mrs. X is complaining of arthralgia, lethargy, muscle pains and Raynaud phenomenon for 4 weeks. She has a 3 months history of GERD and pulmonary hypertension.

Examination showed butterfly rash on her cheeks and mouth ulcer. There is bilateral cervical lymphadenopathy. Investigation showed:

Bilirubin	15 µmol/L	(2-17 µmol/L)
ALT	24 U/L	(8-20 U/L)
Serum creatinine	125 mmol/L	(53-106 mmol/L)
ESR	45 1st hour	<10 1st hour

There is ++ protein in urine dipstick. C3 and C4 complement levels are normal.

Which other antibodies are most likely to be present?

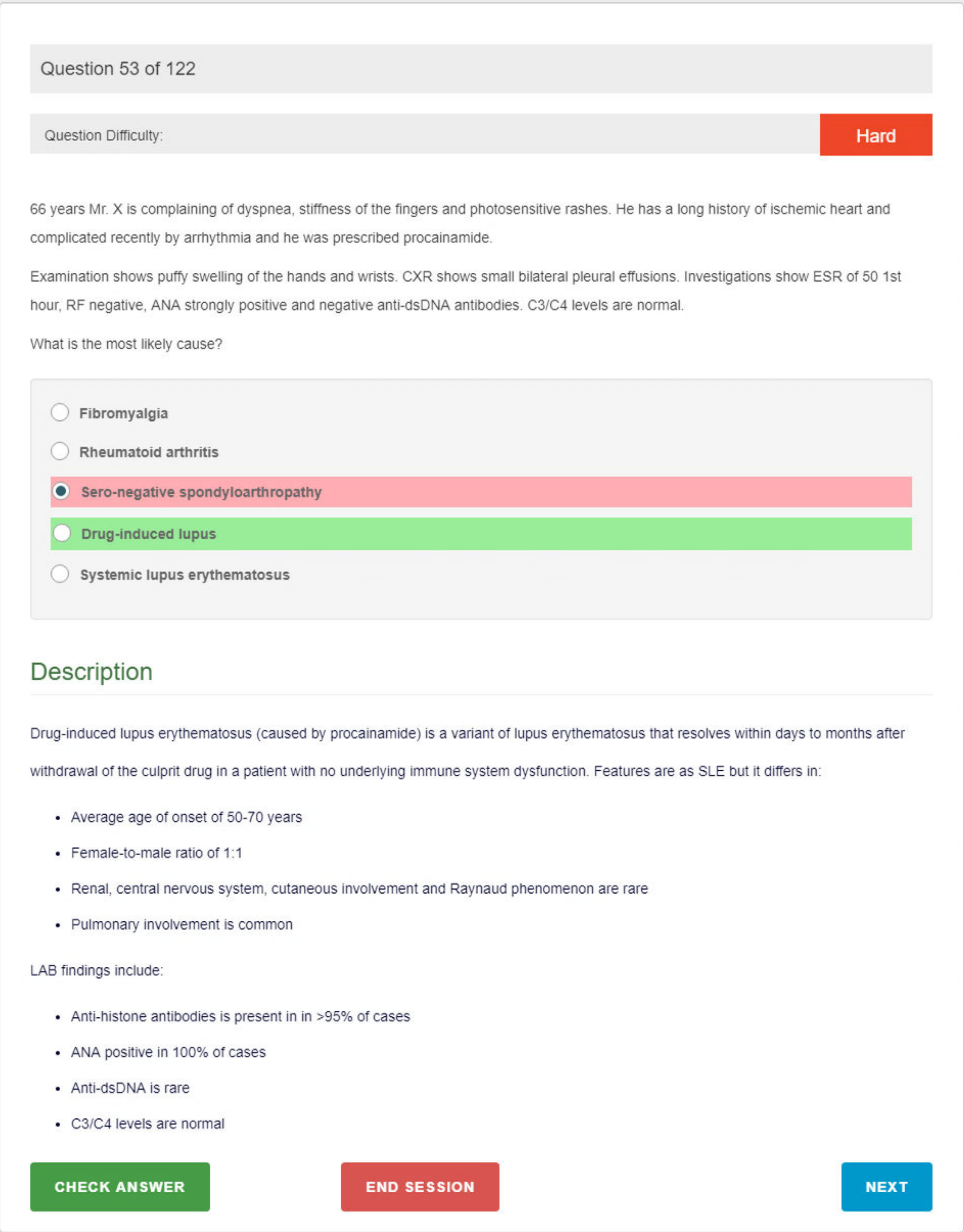
○ **Anti-RO**
○ **Anti-Jo**
○ **Anti-RNP**
● **Anti-Scl-70**
○ **Anti-centromere**

Description

This patient has mixed connective-tissue disease (MCTD). It is an overlapping clinical features of systemic lupus erythematosus (SLE), scleroderma, and myositis.

U1-ribonucleoprotein (RNP) antibody is diagnostic. Anti–dsDNA, anticentromere and anti–Scl-70 antibodies are negative. C3 and C4 complement levels are normal.

Session Statistics



Question 53 of 122

Question Difficulty: **Hard**

66 years Mr. X is complaining of dyspnea, stiffness of the fingers and photosensitive rashes. He has a long history of ischemic heart and complicated recently by arrhythmia and he was prescribed procainamide.

Examination shows puffy swelling of the hands and wrists. CXR shows small bilateral pleural effusions. Investigations show ESR of 50 1st hour, RF negative, ANA strongly positive and negative anti-dsDNA antibodies. C3/C4 levels are normal.

What is the most likely cause?

○ **Fibromyalgia**
○ **Rheumatoid arthritis**
● **Sero-negative spondyloarthropathy**
○ **Drug-induced lupus**
○ **Systemic lupus erythematosus**

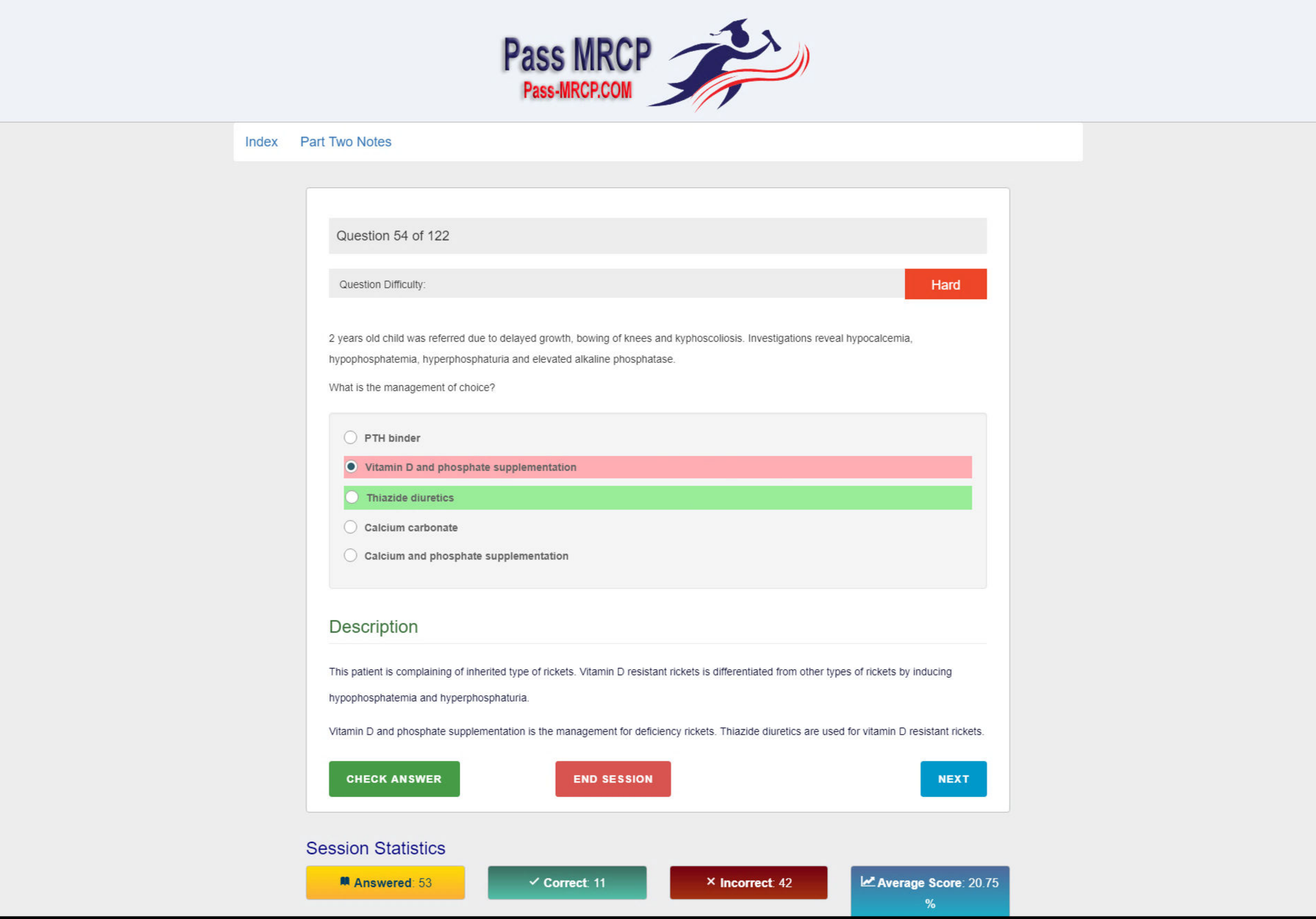
Description

Drug-induced lupus erythematosus (caused by procainamide) is a variant of lupus erythematosus that resolves within days to months after withdrawal of the culprit drug in a patient with no underlying immune system dysfunction. Features are as SLE but it differs in:

- Average age of onset of 50-70 years
- Female-to-male ratio of 1:1
- Renal, central nervous system, cutaneous involvement and Raynaud phenomenon are rare
- Pulmonary involvement is common

LAB findings include:

- Anti-histone antibodies is present in in >95% of cases
- ANA positive in 100% of cases
- Anti-dsDNA is rare
- C3/C4 levels are normal



Question 54 of 122

Question Difficulty: Hard

2 years old child was referred due to delayed growth, bowing of knees and kyphoscoliosis. Investigations reveal hypocalcemia, hypophosphatemia, hyperphosphaturia and elevated alkaline phosphatase.

What is the management of choice?

○ **PTH binder**
● **Vitamin D and phosphate supplementation**
○ **Thiazide diuretics**
○ **Calcium carbonate**
○ **Calcium and phosphate supplementation**

Description

This patient is complaining of inherited type of rickets. Vitamin D resistant rickets is differentiated from other types of rickets by inducing hypophosphatemia and hyperphosphaturia.

Vitamin D and phosphate supplementation is the management for deficiency rickets. Thiazide diuretics are used for vitamin D resistant rickets.

Session Statistics

Answered: 53
✓ **Correct**: 11
× **Incorrect**: 42
Average Score: 20.75 %

Question 55 of 122

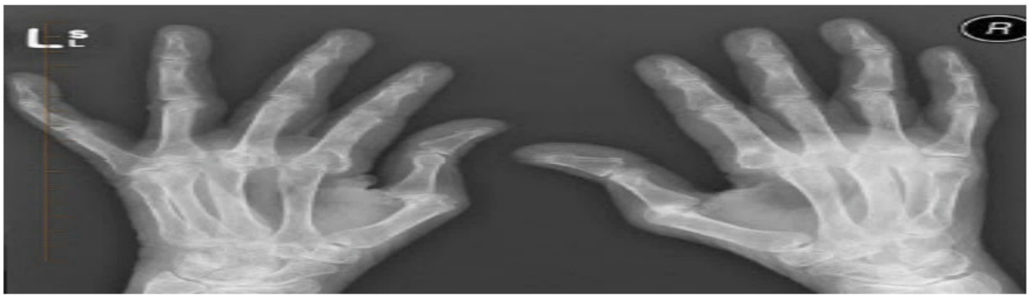
Question Difficulty: Average

Mr. X is complaining of pain and stiffness in the joints of his hands for 4 weeks. He also reported stable dyspnea that started 2 weeks ago.

Examination shows symmetrical swollen hand joints at the level of metacarpophalangeal joints with soft-tissue swelling around the joint. There are bilateral subcutaneous nodules around the elbows. Investigation show:

Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	230 million/mm3	(150-450 million/mm3)
Erythrocyte count	4.5 million/mm3	4.3-5.9 million/mm3
Hemoglobin	8 g/dL	13.5-17.5 g/dL
Rheumatoid factor	Negative	
ESR	88 1st hour	< 10 1st hour

CXR shows pleural effusion. Hand x-ray is shown in the image.



What is the most likely diagnosis?

○ **Seronegative arthritis**
○ **SLE**
● **Polymyalgia rheumatica**
○ **Reactive arthritis**
○ **Rheumatoid arthritis**

Description

Rheumatoid arthritis (RA) is a chronic autoimmune systemic inflammatory disease of unknown cause leading to articular and extra-articular manifestations.

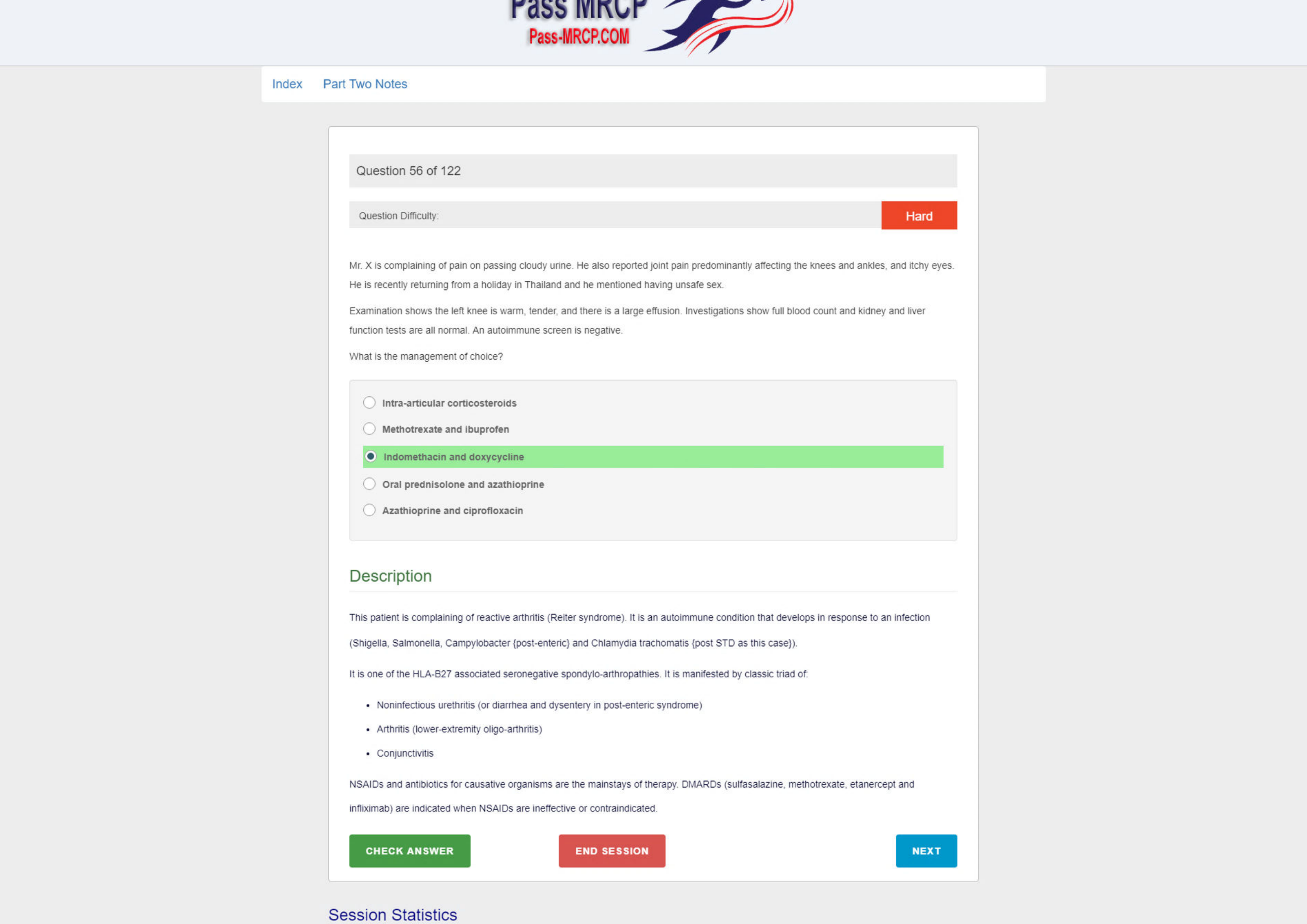
Persistent symmetric polyarthritis of hands and feet is the hallmark feature. Hand x-ray shows loss of joint space, periarticular osteoporosis and soft-tissue swelling.

Pleural effusion is a common pulmonary complication. Rheumatoid factor occurs in 60-80% of patients and is not specific for diagnosis.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 54
✓ **Correct**: 11
✕ **Incorrect**: 43
Average Score: 20.37 %



Question 56 of 122

Question Difficulty: **Hard**

Mr. X is complaining of pain on passing cloudy urine. He also reported joint pain predominantly affecting the knees and ankles, and itchy eyes. He is recently returning from a holiday in Thailand and he mentioned having unsafe sex.

Examination shows the left knee is warm, tender, and there is a large effusion. Investigations show full blood count and kidney and liver function tests are all normal. An autoimmune screen is negative.

What is the management of choice?

○ **Intra-articular corticosteroids**
○ **Methotrexate and ibuprofen**
● **Indomethacin and doxycycline**
○ **Oral prednisolone and azathioprine**
○ **Azathioprine and ciprofloxacin**

Description

This patient is complaining of reactive arthritis (Reiter syndrome). It is an autoimmune condition that develops in response to an infection (Shigella, Salmonella, Campylobacter {post-enteric} and Chlamydia trachomatis {post STD as this case}).

It is one of the HLA-B27 associated seronegative spondylo-arthropathies. It is manifested by classic triad of:

- Noninfectious urethritis (or diarrhea and dysentery in post-enteric syndrome)
- Arthritis (lower-extremity oligo-arthritis)
- Conjunctivitis

NSAIDs and antibiotics for causative organisms are the mainstays of therapy. DMARDs (sulfasalazine, methotrexate, etanercept and infliximab) are indicated when NSAIDs are ineffective or contraindicated.

Question 57 of 122

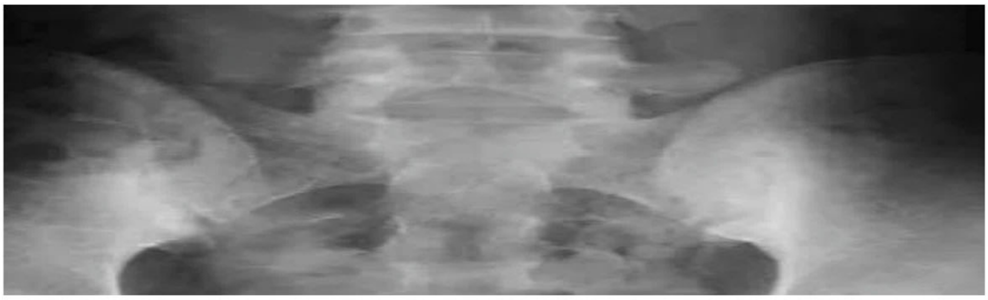
Question Difficulty: **Easy**

Mr. X is complaining of back pain and stiffness for the past 4 months. He describes the pain as more in the morning and the evening and relieved by exercise. He also reported intermittent red and itchy eyes and pain around the Achilles tendon of the left leg.

Examination shows severe thoracic kyphosis and fine inspiratory crepitation at the lung apices. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	6.5 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	240 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	40 1st hour	<10 1st hour

X-ray of the lumbar spine and hips is shown in the image.



What is the most likely diagnosis?

○ **Paget disease**
● **Ankylosing spondylitis**
○ **Reiter syndrome**
○ **Lumbar disc prolapse with sciatica**
○ **Rheumatoid arthritis**

Description

Ankylosing spondylitis (AS) is a chronic, multisystem inflammatory disorder involving primarily the sacroiliac (SI) joints and the axial skeleton. It is a HLA-B27 associated spondylo-arthropathy. It is manifested by:

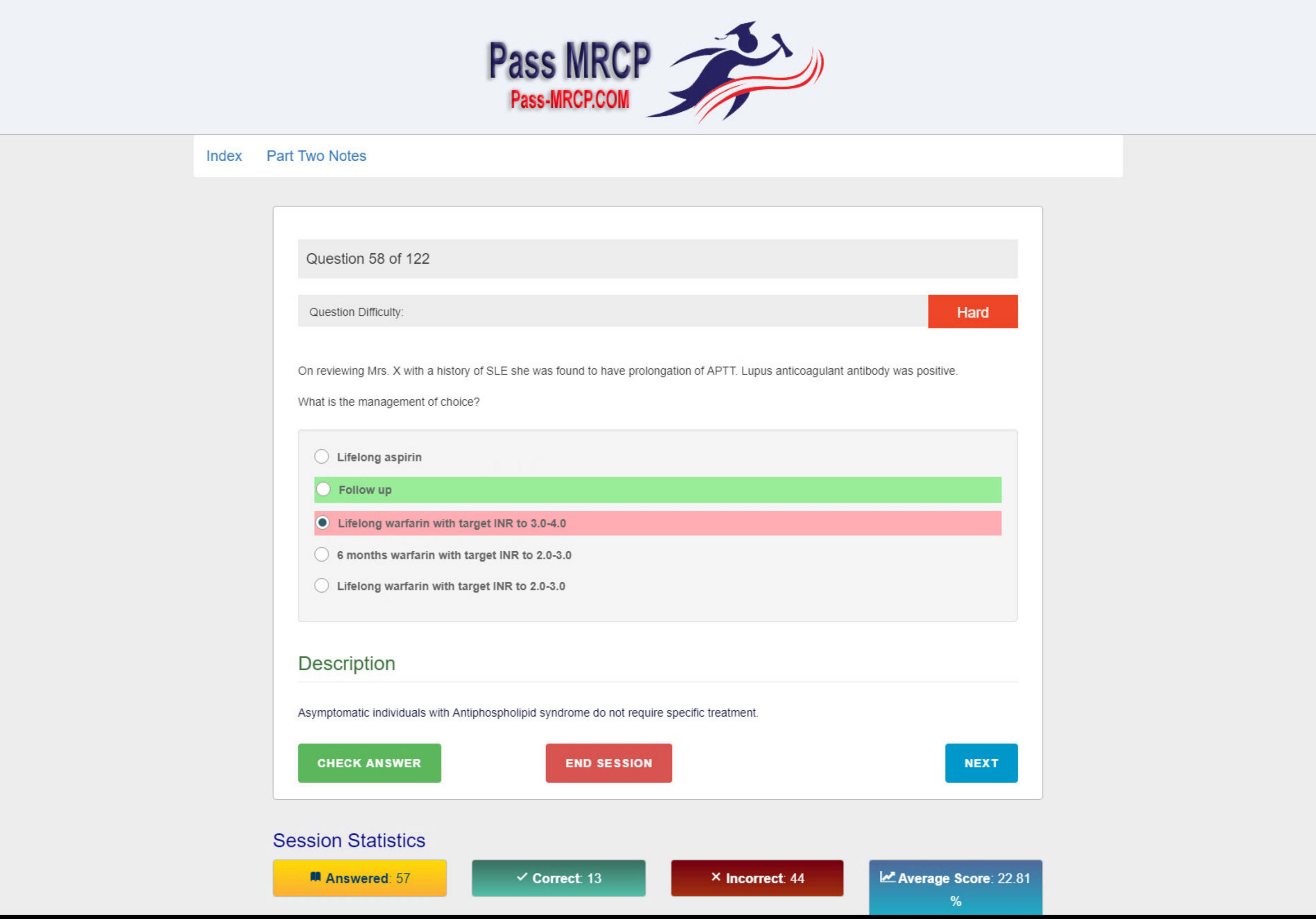
- Insidious onset of low back pain (the most common symptom)
- Presence of symptoms for more than 3 months
- Symptoms worse in the morning or with inactivity and improvement with exercise (inflammatory arthritis)
- Reduced lateral and forward (Schober test) flexion of the spine (< 15 cm)

X-Ray shows sacroilitis with subchondral erosions and sclerosis.

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 56 ✓ **Correct**: 12 × **Incorrect**: 44 **Average Score**: 21.43 %


Pass MRCP
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Part Two Notes
CHECK ANSWER
END SESSION
NEXT

Question 58 of 122

Question Difficulty: Hard

On reviewing Mrs. X with a history of SLE she was found to have prolongation of APTT. Lupus anticoagulant antibody was positive.

What is the management of choice?

- ○ **Lifelong aspirin**
- ○ **Follow up**
- ● **Lifelong warfarin with target INR to 3.0-4.0**
- ○ **6 months warfarin with target INR to 2.0-3.0**
- ○ **Lifelong warfarin with target INR to 2.0-3.0**

Description

Asymptomatic individuals with Antiphospholipid syndrome do not require specific treatment.

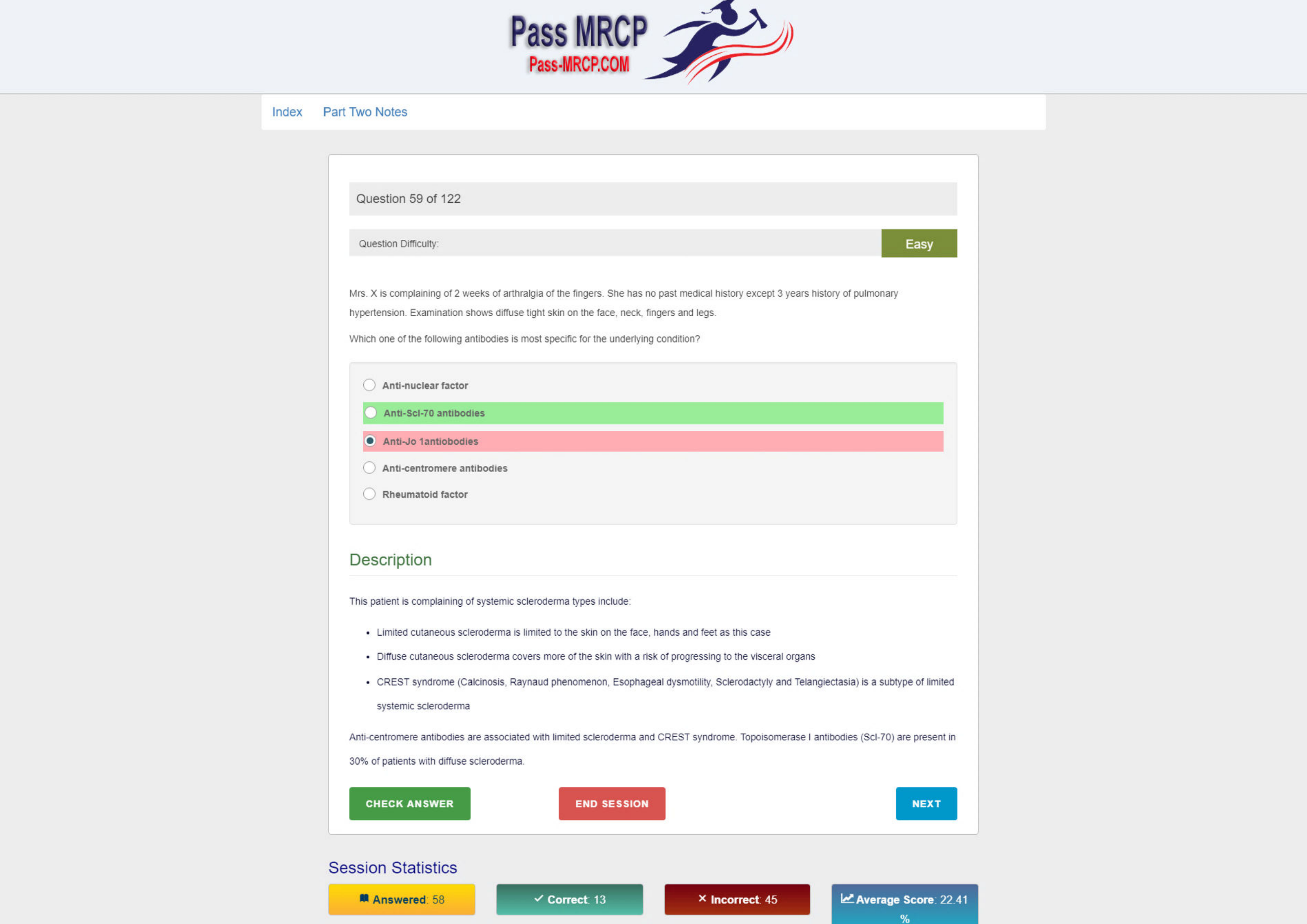
Session Statistics

Answered: 57

✓ **Correct**: 13

× **Incorrect**: 44

Average Score: 22.81 %



Question 59 of 122

Question Difficulty: **Easy**

Mrs. X is complaining of 2 weeks of arthralgia of the fingers. She has no past medical history except 3 years history of pulmonary hypertension. Examination shows diffuse tight skin on the face, neck, fingers and legs.

Which one of the following antibodies is most specific for the underlying condition?

○ **Anti-nuclear factor**
○ **Anti-Scl-70 antibodies**
● **Anti-Jo 1antiobodies**
○ **Anti-centromere antibodies**
○ **Rheumatoid factor**

Description

This patient is complaining of systemic scleroderma types include:

- Limited cutaneous scleroderma is limited to the skin on the face, hands and feet as this case
- Diffuse cutaneous scleroderma covers more of the skin with a risk of progressing to the visceral organs
- CREST syndrome (Calcinosis, Raynaud phenomenon, Esophageal dysmotility, Sclerodactyly and Telangiectasia) is a subtype of limited systemic scleroderma

Anti-centromere antibodies are associated with limited scleroderma and CREST syndrome. Topoisomerase I antibodies (Scl-70) are present in 30% of patients with diffuse scleroderma.

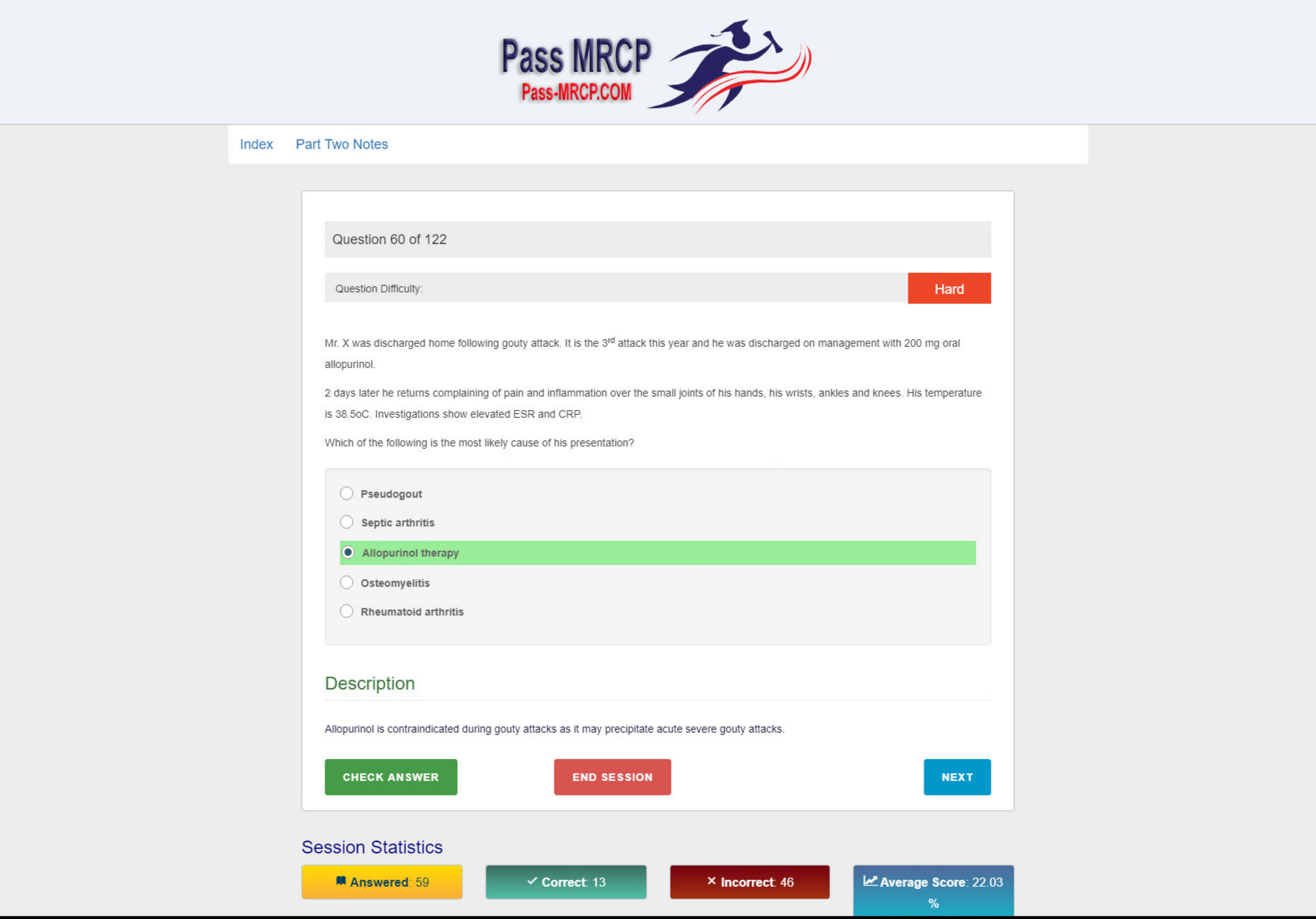
Session Statistics

Answered: 58

✓ **Correct**: 13

✕ **Incorrect**: 45

Average Score: 22.41 %



Question 60 of 122

Question Difficulty: Hard

Mr. X was discharged home following gouty attack. It is the 3rd attack this year and he was discharged on management with 200 mg oral allopurinol.

2 days later he returns complaining of pain and inflammation over the small joints of his hands, his wrists, ankles and knees. His temperature is 38.5oC. Investigations show elevated ESR and CRP.

Which of the following is the most likely cause of his presentation?

- ○ **Pseudogout**
- ○ **Septic arthritis**
- ● **Allopurinol therapy**
- ○ **Osteomyelitis**
- ○ **Rheumatoid arthritis**

Description

Allopurinol is contraindicated during gouty attacks as it may precipitate acute severe gouty attacks.

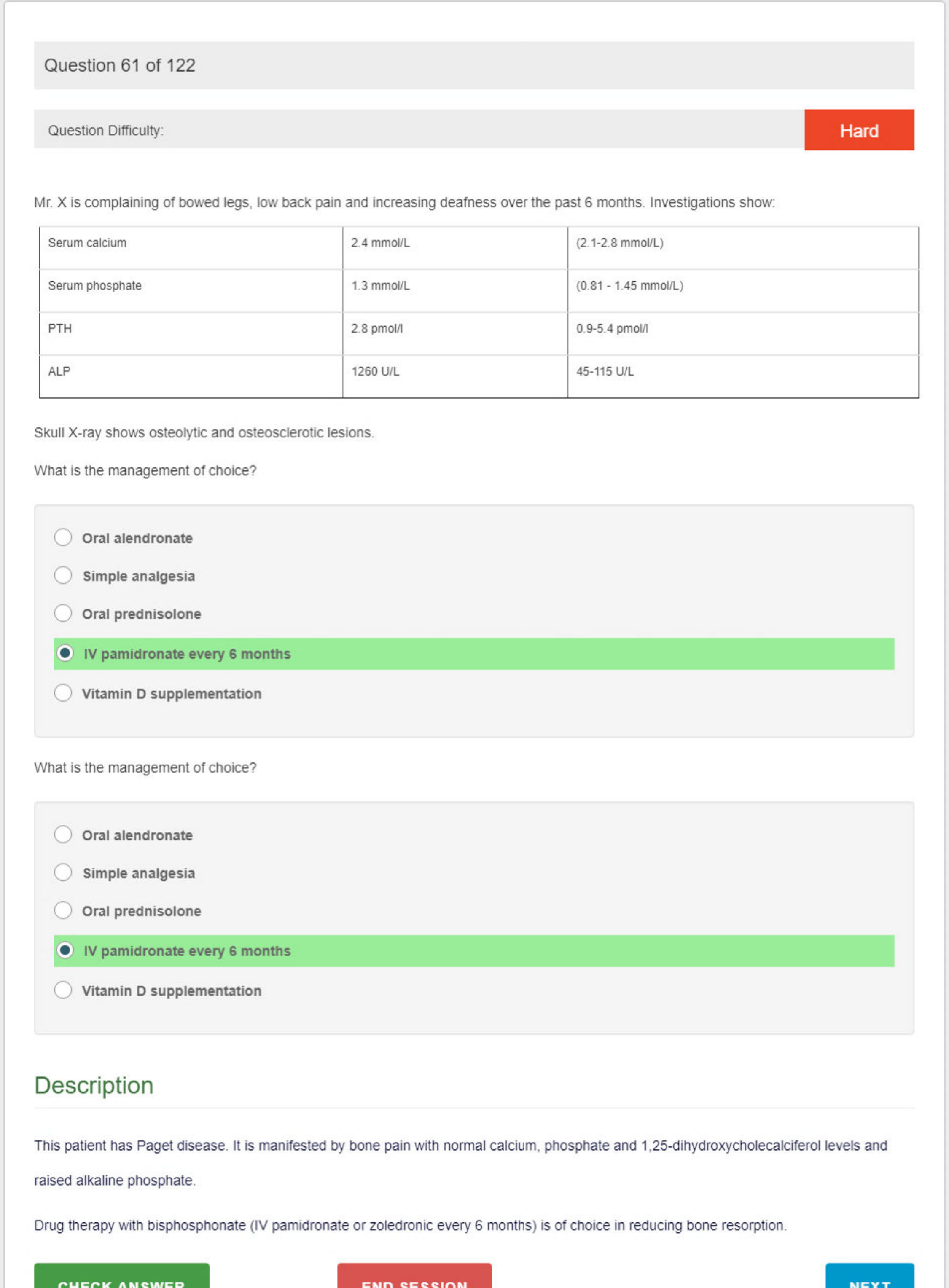
Session Statistics

Answered: 59

✓ **Correct**: 13

× **Incorrect**: 46

Average Score: 22.03 %



Question 61 of 122

Question Difficulty: **Hard**

Mr. X is complaining of bowed legs, low back pain and increasing deafness over the past 6 months. Investigations show:

Serum calcium	2.4 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	1.3 mmol/L	(0.81 - 1.45 mmol/L)
PTH	2.8 pmol/l	0.9-5.4 pmol/l
ALP	1260 U/L	45-115 U/L

Skull X-ray shows osteolytic and osteosclerotic lesions.

What is the management of choice?

- ○ **Oral alendronate**
- ○ **Simple analgesia**
- ○ **Oral prednisolone**
- ● **IV pamidronate every 6 months**
- ○ **Vitamin D supplementation**

What is the management of choice?

- ○ **Oral alendronate**
- ○ **Simple analgesia**
- ○ **Oral prednisolone**
- ● **IV pamidronate every 6 months**
- ○ **Vitamin D supplementation**

Description

This patient has Paget disease. It is manifested by bone pain with normal calcium, phosphate and 1,25-dihydroxycholecalciferol levels and raised alkaline phosphate.

Drug therapy with bisphosphonate (IV pamidronate or zoledronic every 6 months) is of choice in reducing bone resorption.

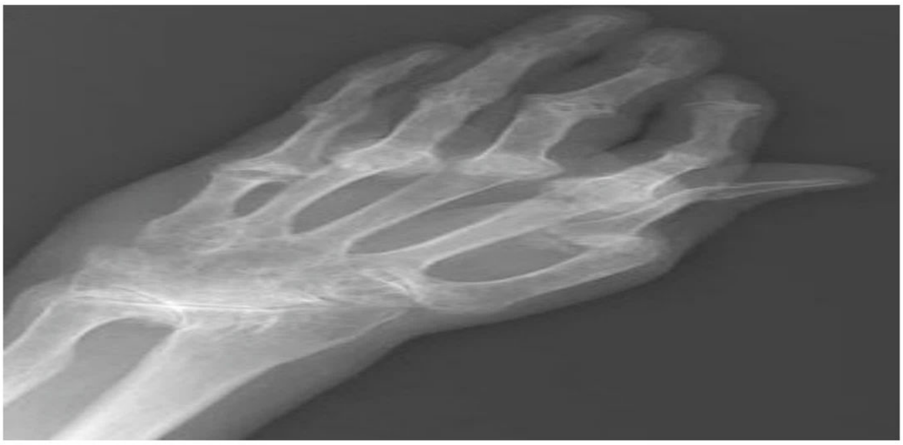
Question 62 of 122

Question Difficulty: **Hard**

Mr. X is complaining of painful hands and fingers joints for 2 weeks. He reported 4 days of developed scaly salmon-pink skin lesions in his hands. He has no other past medical history of note.

Examination shows bilateral sausage shaped fingers and pain over the distal interphalangeal joints. His nails are pitted ant atrophied. His hand X ray is shown in the image. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	6.5 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	240 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	40 1st hour	<10 1st hour
RF	Negative	



What is the most likely diagnosis?

○ **Gout**
○ **Rheumatoid arthritis**
● **Osteoarthritis**
○ **Psoriatic arthritis**
○ **Post viral arthritis**

Description

Psoriatic arthritis develops in at least 5% of patients with psoriasis. It precedes the development of skin lesions in 60-80% of patients.

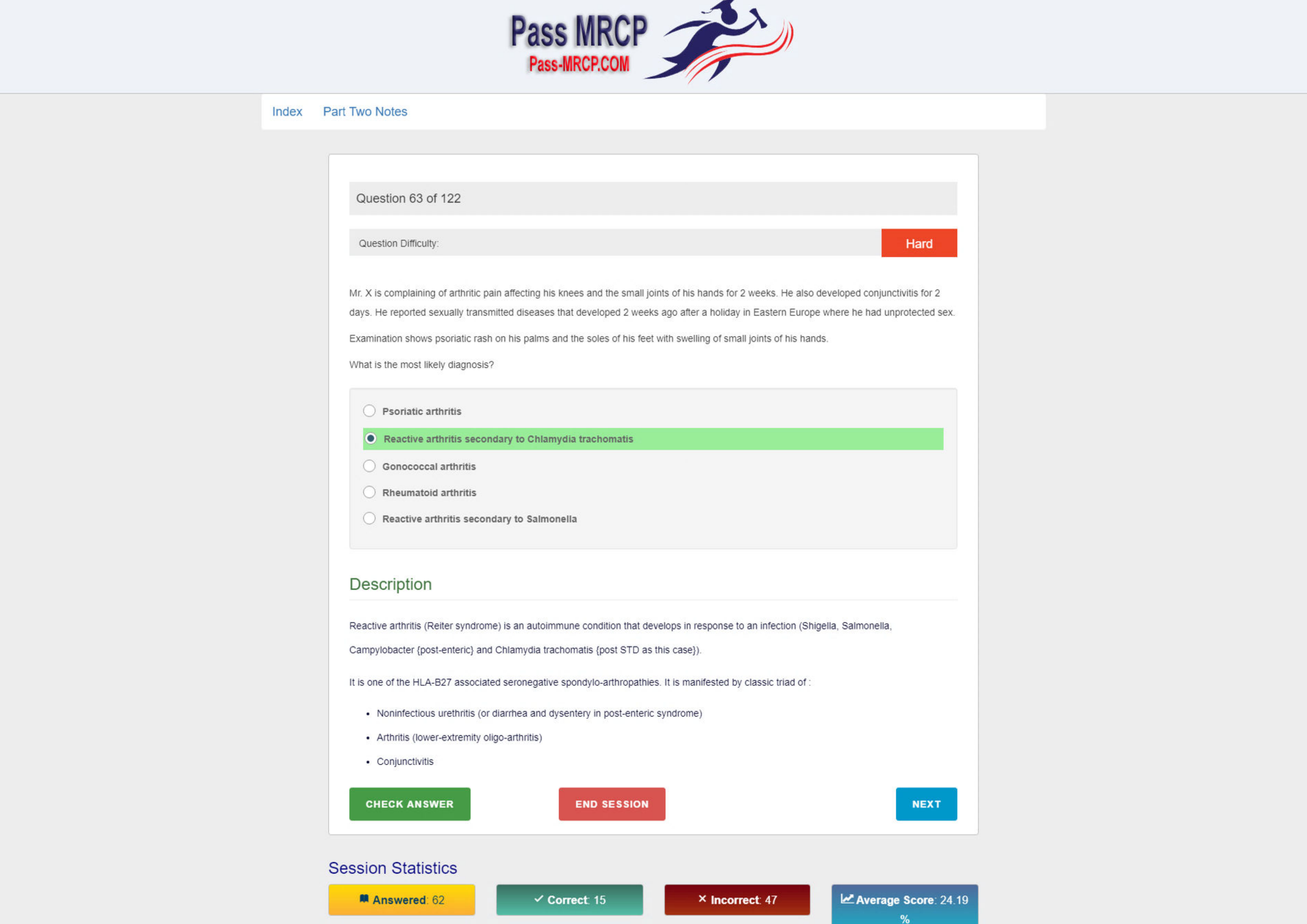
Rheumatoid-like polyarthritis is the most common form. Psoriatic arthropathy is distinguished from rheumatoid arthritis by:

- Scaly lesions on the skin
- Nail changes
- Distal interphalangeal (DIP) joint involvement (shown in the image)
- Negative rheumatoid factor
- Dactylitis

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 61 ✓ **Correct**: 15 ✕ **Incorrect**: 46 **Average Score**: 24.59 %



Question 63 of 122

Question Difficulty: Hard

Mr. X is complaining of arthritic pain affecting his knees and the small joints of his hands for 2 weeks. He also developed conjunctivitis for 2 days. He reported sexually transmitted diseases that developed 2 weeks ago after a holiday in Eastern Europe where he had unprotected sex.

Examination shows psoriatic rash on his palms and the soles of his feet with swelling of small joints of his hands.

What is the most likely diagnosis?

○ **Psoriatic arthritis**
● **Reactive arthritis secondary to Chlamydia trachomatis**
○ **Gonococcal arthritis**
○ **Rheumatoid arthritis**
○ **Reactive arthritis secondary to Salmonella**

Description

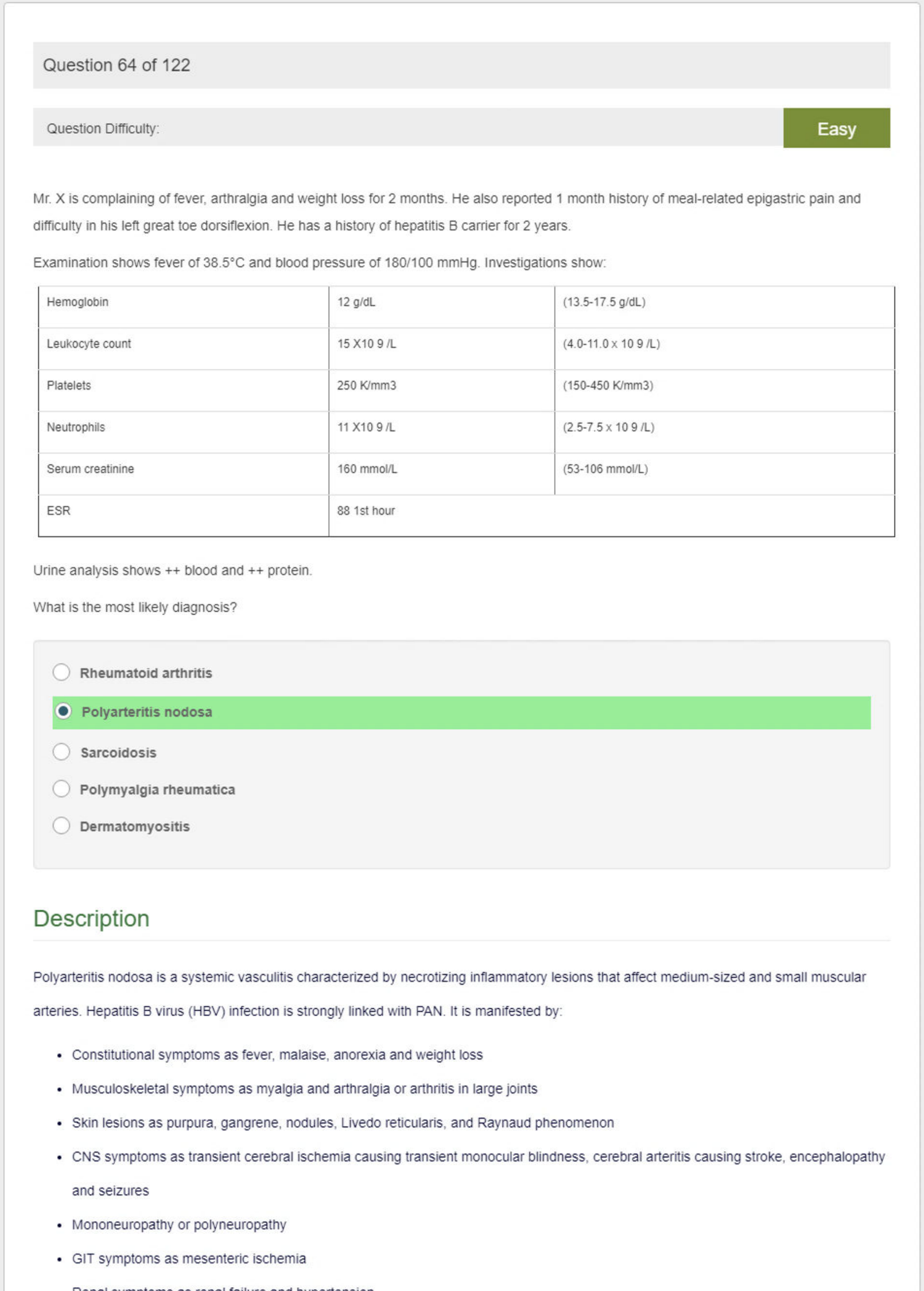
Reactive arthritis (Reiter syndrome) is an autoimmune condition that develops in response to an infection (Shigella, Salmonella, Campylobacter {post-enteric} and Chlamydia trachomatis {post STD as this case}).

It is one of the HLA-B27 associated seronegative spondylo-arthropathies. It is manifested by classic triad of :

- Noninfectious urethritis (or diarrhea and dysentery in post-enteric syndrome)
- Arthritis (lower-extremity oligo-arthritis)
- Conjunctivitis

Session Statistics

Answered: 62
Correct: 15
Incorrect: 47
Average Score: 24.19 %



Question 64 of 122

Question Difficulty: Easy

Mr. X is complaining of fever, arthralgia and weight loss for 2 months. He also reported 1 month history of meal-related epigastric pain and difficulty in his left great toe dorsiflexion. He has a history of hepatitis B carrier for 2 years.

Examination shows fever of 38.5°C and blood pressure of 180/100 mmHg. Investigations show:

Hemoglobin	12 g/dL	(13.5-17.5 g/dL)
Leukocyte count	15 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	11 X10 9 /L	(2.5-7.5 x 10 9 /L)
Serum creatinine	160 mmol/L	(53-106 mmol/L)
ESR	88 1st hour	

Urine analysis shows ++ blood and ++ protein.

What is the most likely diagnosis?

○ **Rheumatoid arthritis**

● **Polyarteritis nodosa**

○ **Sarcoidosis**

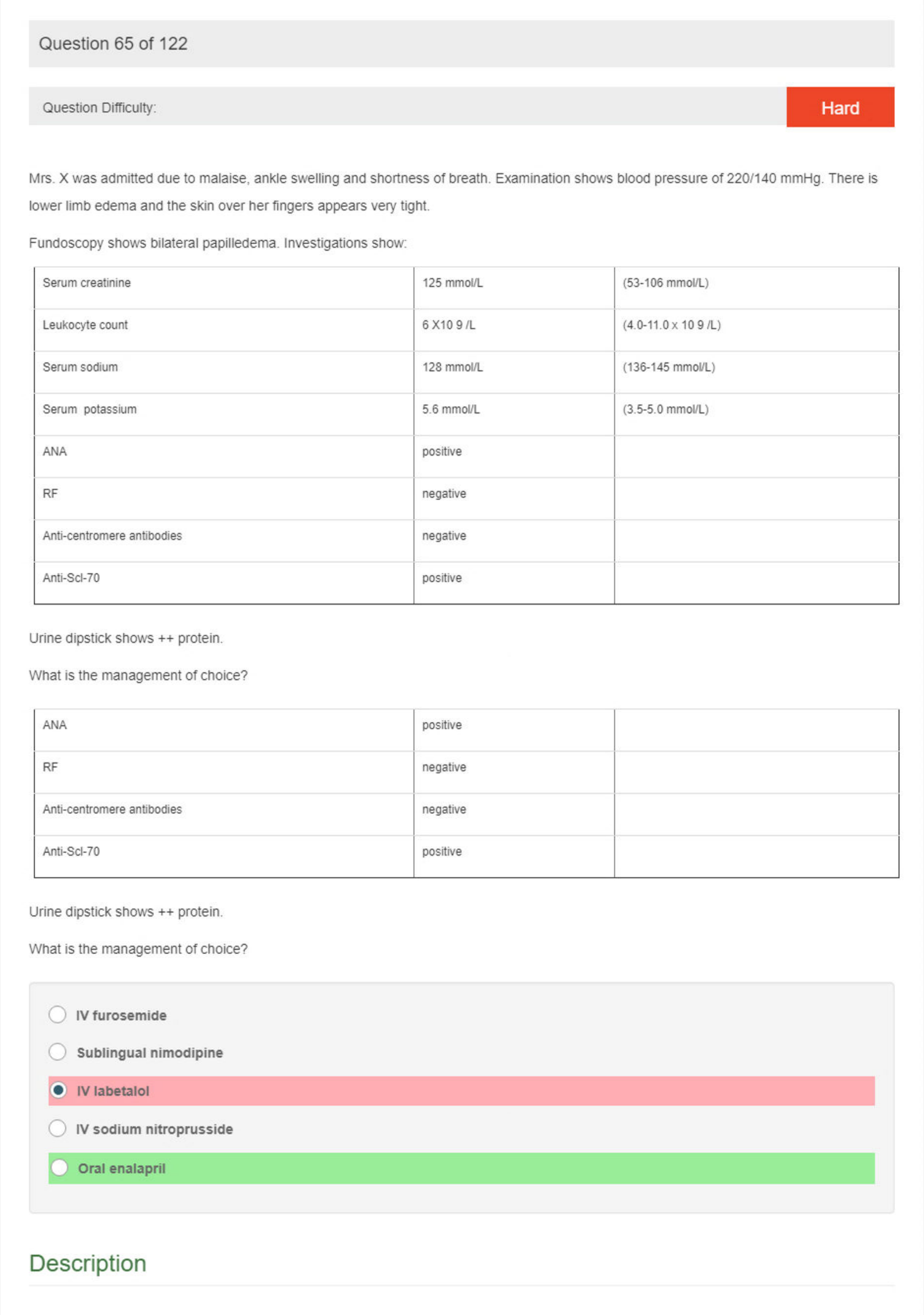
○ **Polymyalgia rheumatica**

○ **Dermatomyositis**

Description

Polyarteritis nodosa is a systemic vasculitis characterized by necrotizing inflammatory lesions that affect medium-sized and small muscular arteries. Hepatitis B virus (HBV) infection is strongly linked with PAN. It is manifested by:

- Constitutional symptoms as fever, malaise, anorexia and weight loss
- Musculoskeletal symptoms as myalgia and arthralgia or arthritis in large joints
- Skin lesions as purpura, gangrene, nodules, Livedo reticularis, and Raynaud phenomenon
- CNS symptoms as transient cerebral ischemia causing transient monocular blindness, cerebral arteritis causing stroke, encephalopathy and seizures
- Mononeuropathy or polyneuropathy
- GIT symptoms as mesenteric ischemia
- Renal symptoms as renal failure and hypertension



Question 65 of 122

Question Difficulty: **Hard**

Mrs. X was admitted due to malaise, ankle swelling and shortness of breath. Examination shows blood pressure of 220/140 mmHg. There is lower limb edema and the skin over her fingers appears very tight.

Fundoscopy shows bilateral papilledema. Investigations show:

Serum creatinine	125 mmol/L	(53-106 mmol/L)
Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Serum sodium	128 mmol/L	(136-145 mmol/L)
Serum potassium	5.6 mmol/L	(3.5-5.0 mmol/L)
ANA	positive	
RF	negative	
Anti-centromere antibodies	negative	
Anti-Scl-70	positive	

Urine dipstick shows ++ protein.

What is the management of choice?

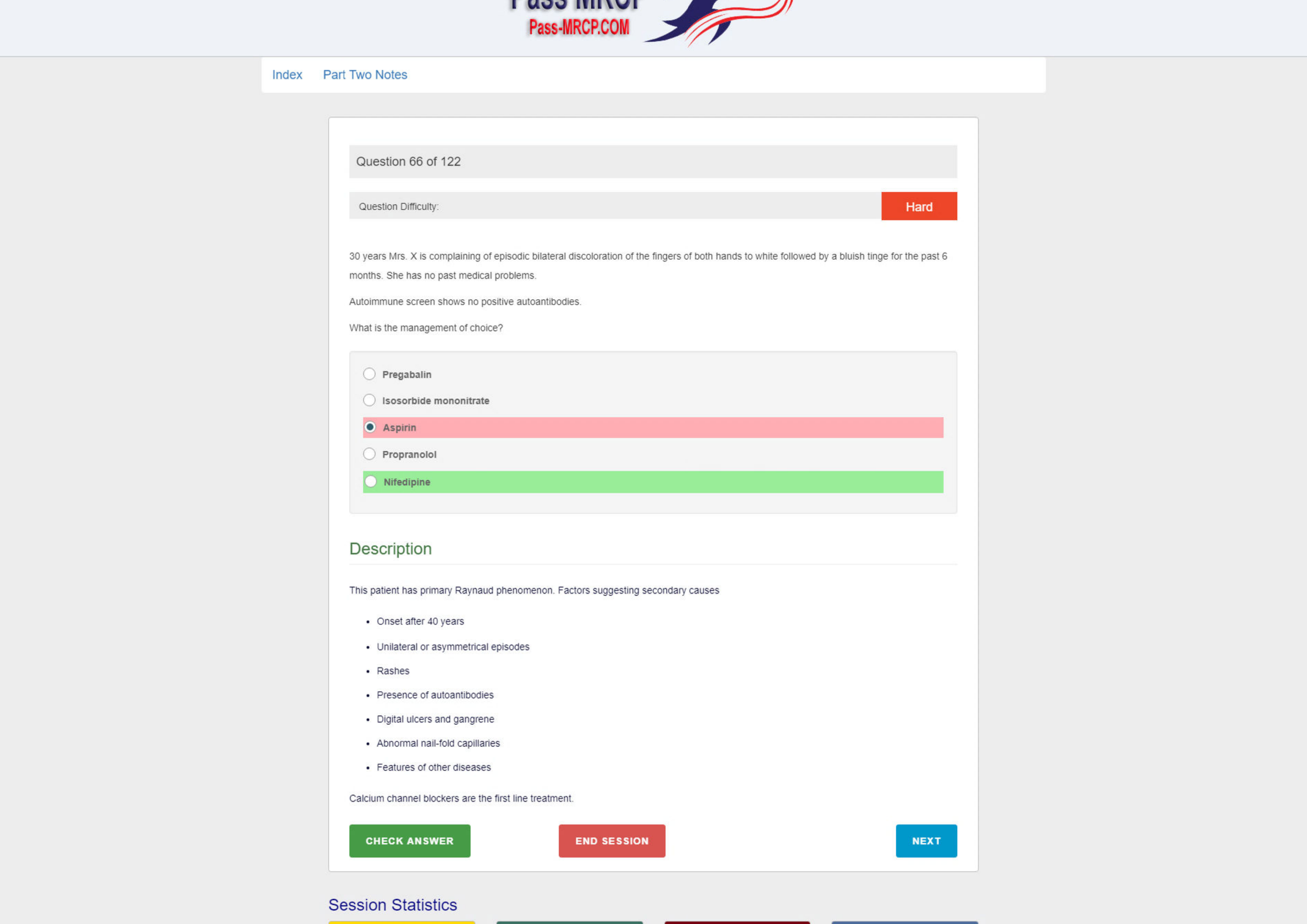
ANA	positive	
RF	negative	
Anti-centromere antibodies	negative	
Anti-Scl-70	positive	

Urine dipstick shows ++ protein.

What is the management of choice?

- ○ **IV furosemide**
- ○ **Sublingual nimodipine**
- ● **IV labetalol**
- ○ **IV sodium nitroprusside**
- ○ **Oral enalapril**

Description



Question 66 of 122

Question Difficulty: Hard

30 years Mrs. X is complaining of episodic bilateral discoloration of the fingers of both hands to white followed by a bluish tinge for the past 6 months. She has no past medical problems.

Autoimmune screen shows no positive autoantibodies.

What is the management of choice?

○ **Pregabalin**
○ **Isosorbide mononitrate**
● **Aspirin** 🟥
○ **Propranolol**
○ **Nifedipine** 🟩

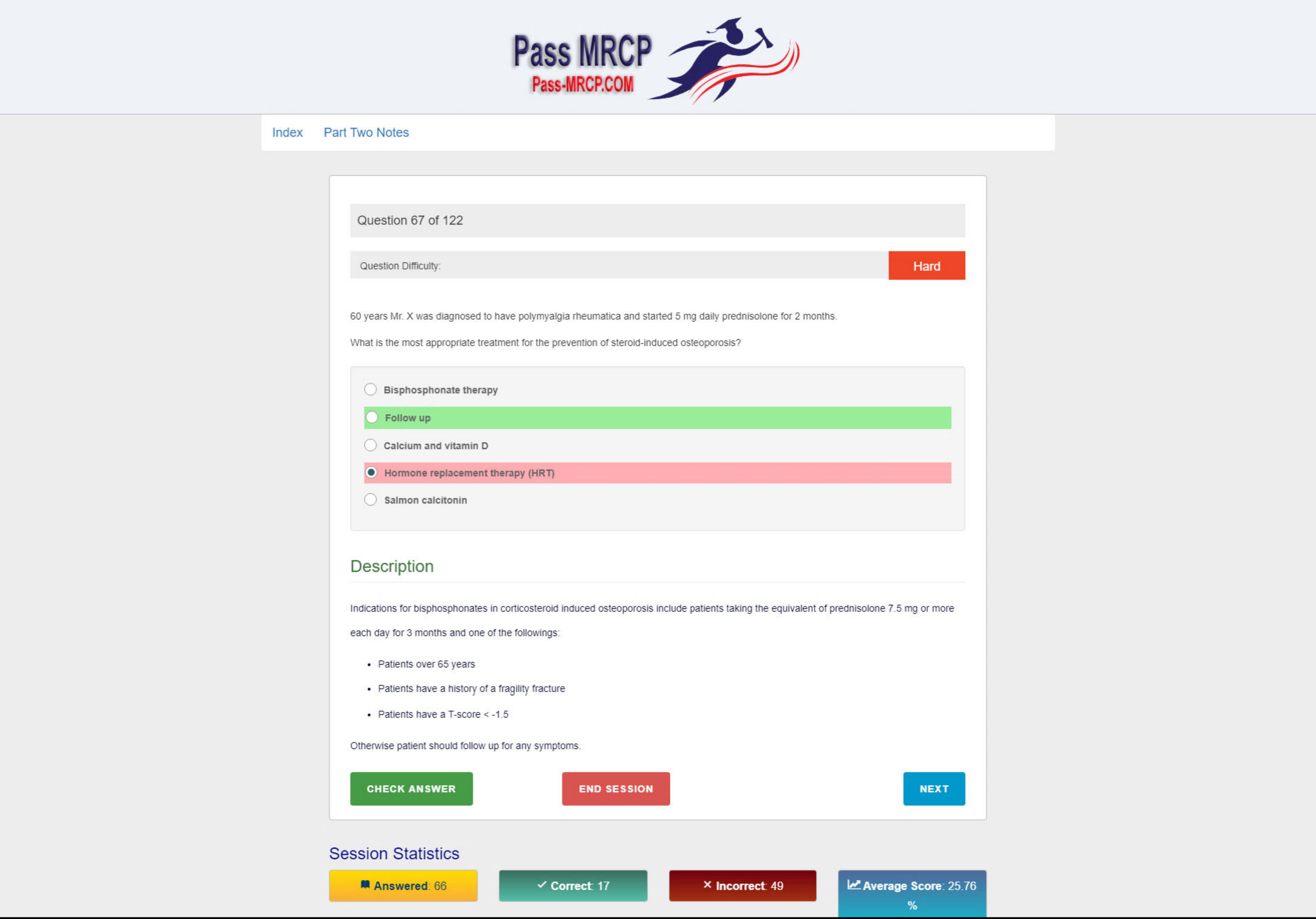
Description

This patient has primary Raynaud phenomenon. Factors suggesting secondary causes

- Onset after 40 years
- Unilateral or asymmetrical episodes
- Rashes
- Presence of autoantibodies
- Digital ulcers and gangrene
- Abnormal nail-fold capillaries
- Features of other diseases

Calcium channel blockers are the first line treatment.

Session Statistics



Question 67 of 122

Question Difficulty: **Hard**

60 years Mr. X was diagnosed to have polymyalgia rheumatica and started 5 mg daily prednisolone for 2 months.

What is the most appropriate treatment for the prevention of steroid-induced osteoporosis?

○ **Bisphosphonate therapy**
○ **Follow up**
○ **Calcium and vitamin D**
● **Hormone replacement therapy (HRT)**
○ **Salmon calcitonin**

Description

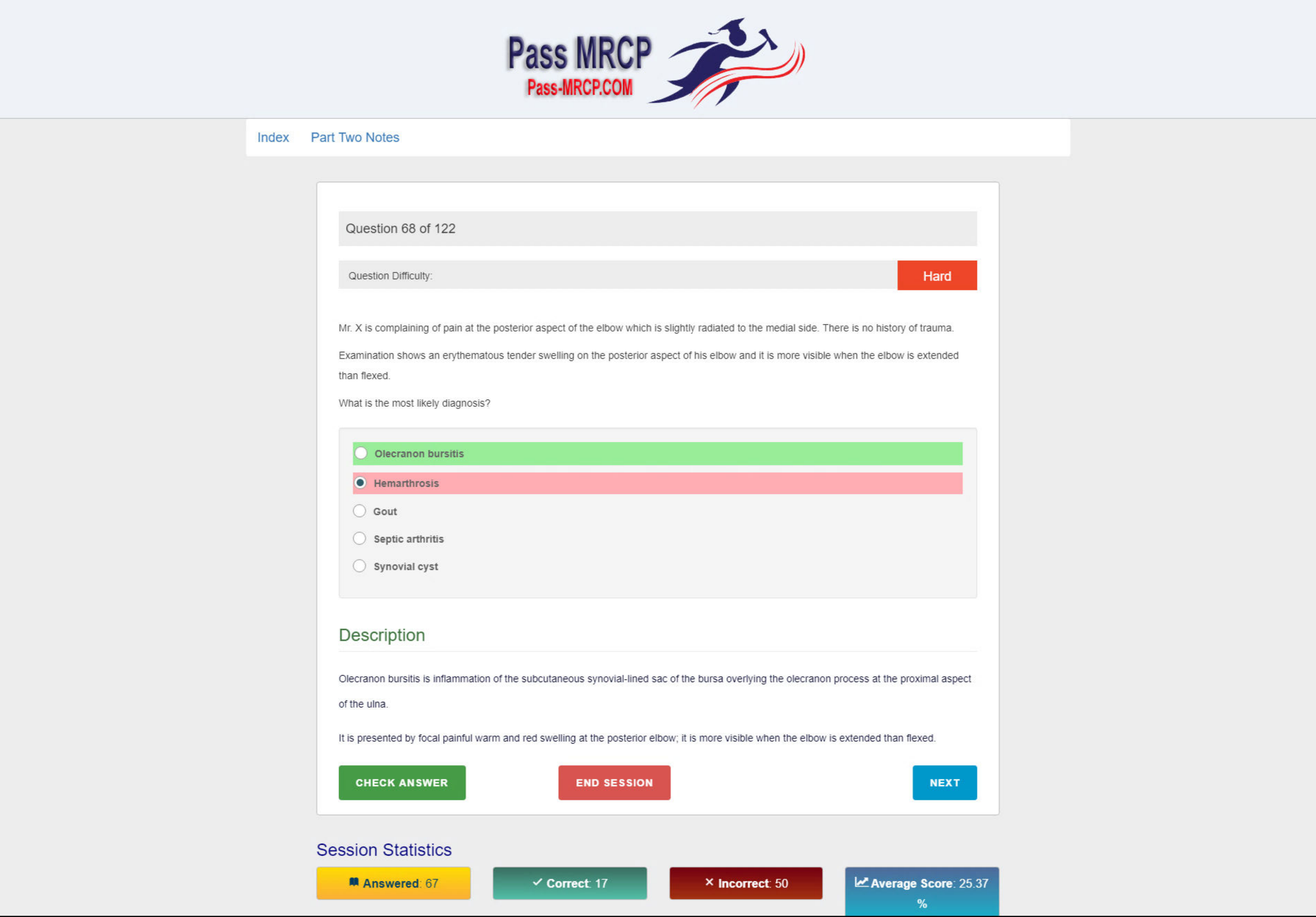
Indications for bisphosphonates in corticosteroid induced osteoporosis include patients taking the equivalent of prednisolone 7.5 mg or more each day for 3 months and one of the followings:

- Patients over 65 years
- Patients have a history of a fragility fracture
- Patients have a T-score < -1.5

Otherwise patient should follow up for any symptoms.

Session Statistics

Answered: 66
✓ **Correct**: 17
× **Incorrect**: 49
Average Score: 25.76 %



Question 68 of 122

Question Difficulty: Hard

Mr. X is complaining of pain at the posterior aspect of the elbow which is slightly radiated to the medial side. There is no history of trauma.

Examination shows an erythematous tender swelling on the posterior aspect of his elbow and it is more visible when the elbow is extended than flexed.

What is the most likely diagnosis?

- ○ **Olecranon bursitis**
- ● **Hemarthrosis**
- ○ **Gout**
- ○ **Septic arthritis**
- ○ **Synovial cyst**

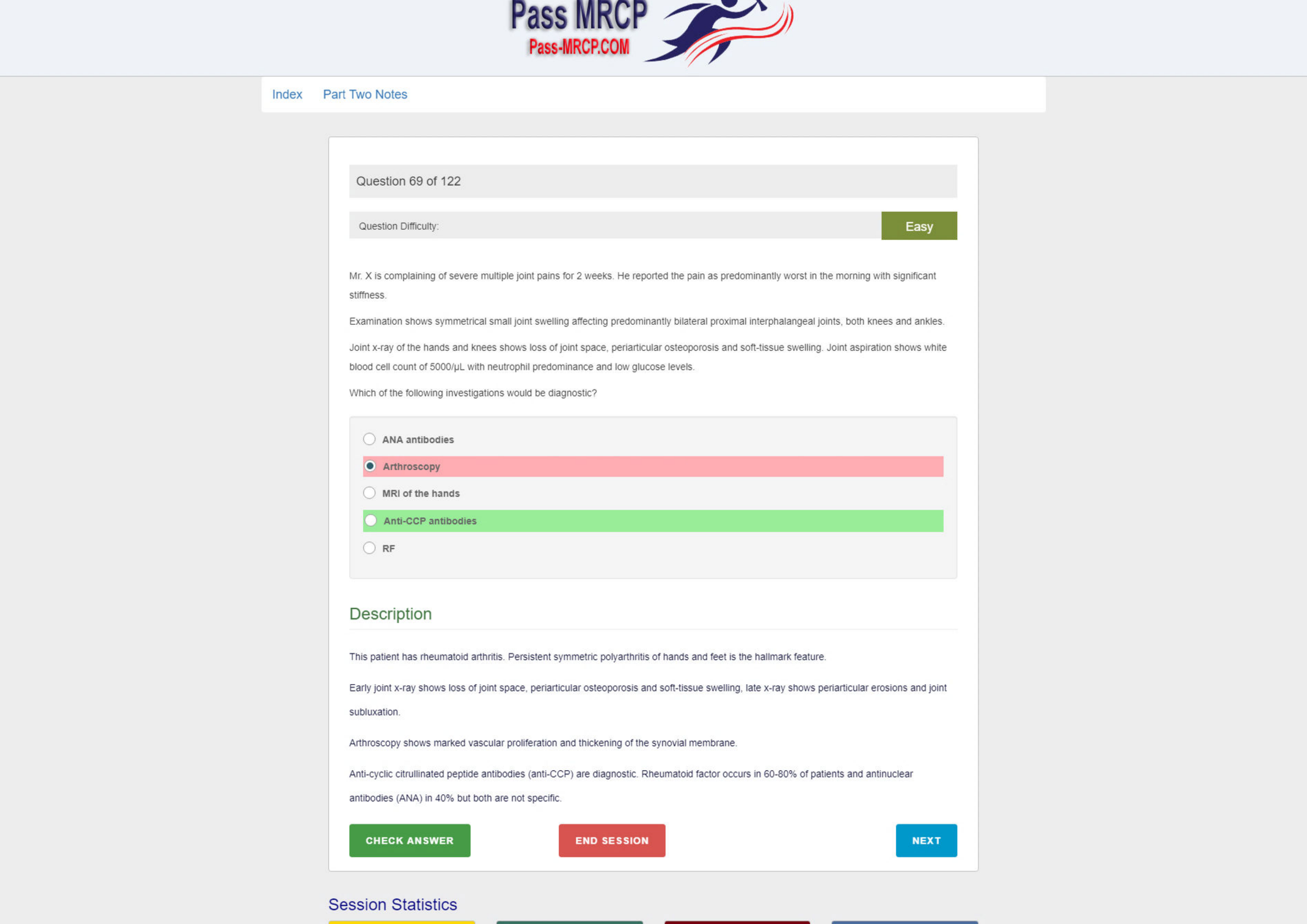
Description

Olecranon bursitis is inflammation of the subcutaneous synovial-lined sac of the bursa overlying the olecranon process at the proximal aspect of the ulna.

It is presented by focal painful warm and red swelling at the posterior elbow; it is more visible when the elbow is extended than flexed.

Session Statistics

Answered: 67
Correct: 17
Incorrect: 50
Average Score: 25.37 %



Question 69 of 122

Question Difficulty: Easy

Mr. X is complaining of severe multiple joint pains for 2 weeks. He reported the pain as predominantly worst in the morning with significant stiffness.

Examination shows symmetrical small joint swelling affecting predominantly bilateral proximal interphalangeal joints, both knees and ankles.

Joint x-ray of the hands and knees shows loss of joint space, periarticular osteoporosis and soft-tissue swelling. Joint aspiration shows white blood cell count of 5000/μL with neutrophil predominance and low glucose levels.

Which of the following investigations would be diagnostic?

○ **ANA antibodies**
● **Arthroscopy**
○ **MRI of the hands**
○ **Anti-CCP antibodies**
○ **RF**

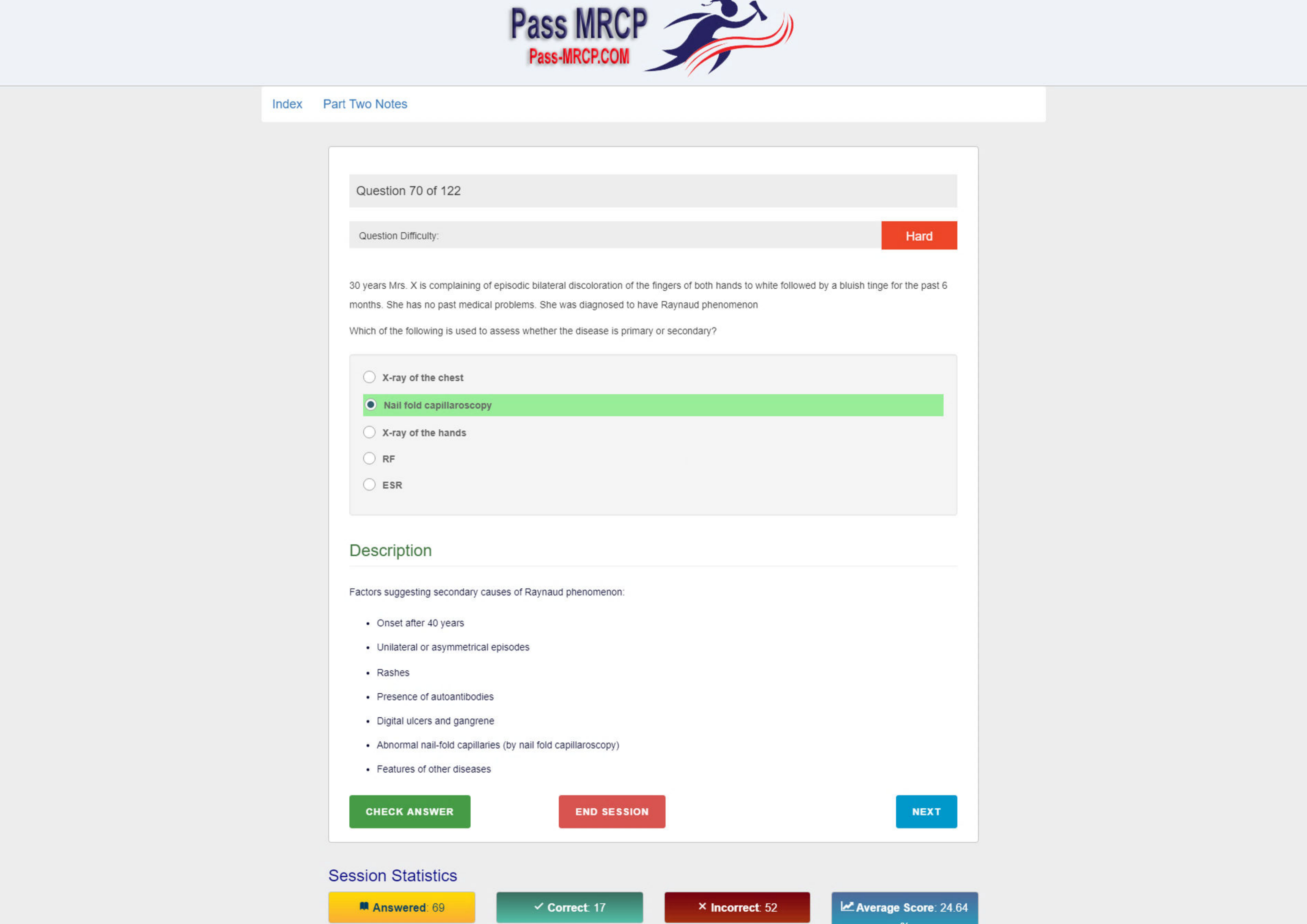
Description

This patient has rheumatoid arthritis. Persistent symmetric polyarthritis of hands and feet is the hallmark feature.

Early joint x-ray shows loss of joint space, periarticular osteoporosis and soft-tissue swelling, late x-ray shows periarticular erosions and joint subluxation.

Arthroscopy shows marked vascular proliferation and thickening of the synovial membrane.

Anti-cyclic citrullinated peptide antibodies (anti-CCP) are diagnostic. Rheumatoid factor occurs in 60-80% of patients and antinuclear antibodies (ANA) in 40% but both are not specific.



Question 70 of 122

Question Difficulty: Hard

30 years Mrs. X is complaining of episodic bilateral discoloration of the fingers of both hands to white followed by a bluish tinge for the past 6 months. She has no past medical problems. She was diagnosed to have Raynaud phenomenon

Which of the following is used to assess whether the disease is primary or secondary?

○ **X-ray of the chest**
● **Nail fold capillaroscopy**
○ **X-ray of the hands**
○ **RF**
○ **ESR**

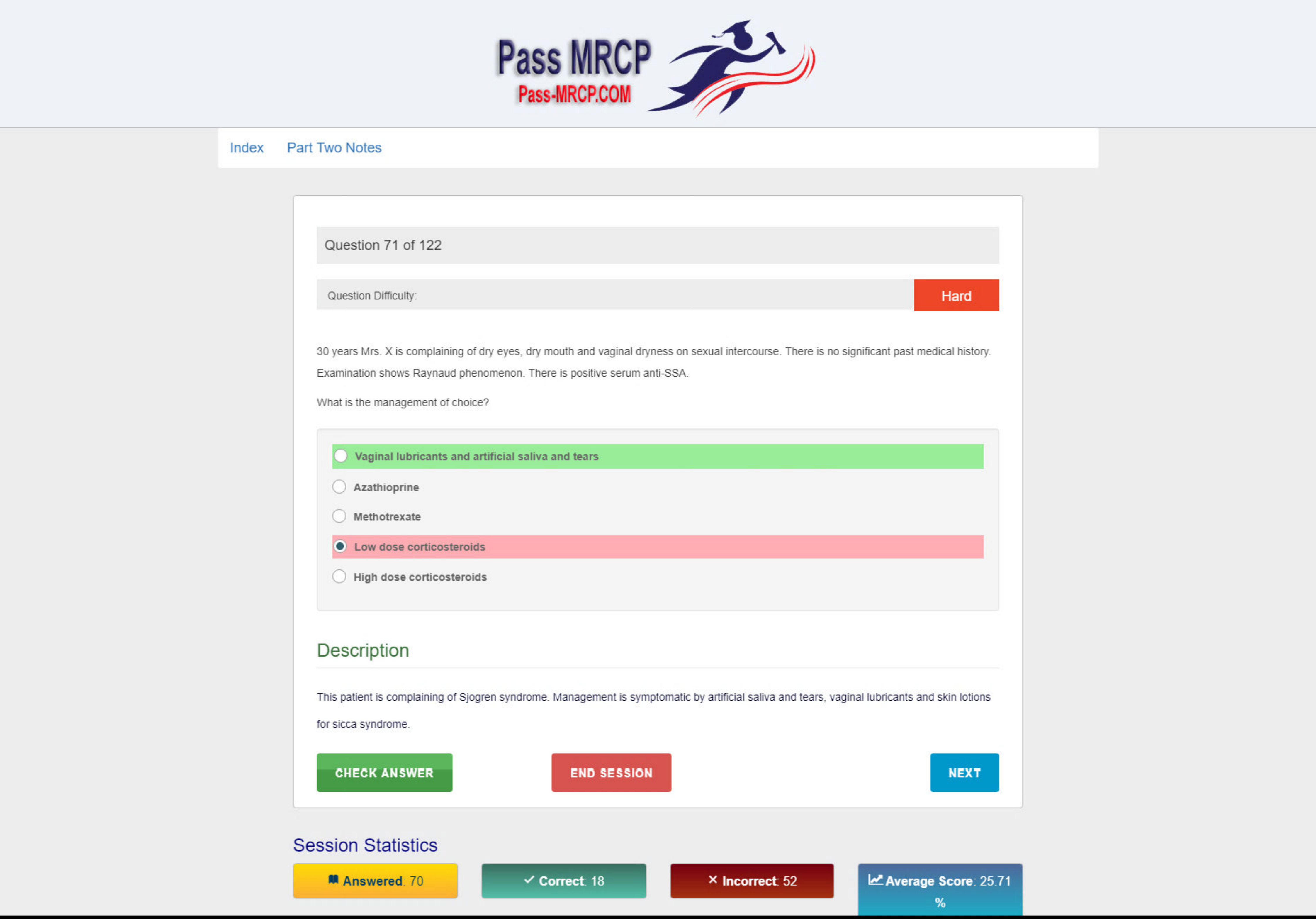
Description

Factors suggesting secondary causes of Raynaud phenomenon:

- Onset after 40 years
- Unilateral or asymmetrical episodes
- Rashes
- Presence of autoantibodies
- Digital ulcers and gangrene
- Abnormal nail-fold capillaries (by nail fold capillaroscopy)
- Features of other diseases

Session Statistics

Answered: 69
Correct: 17
Incorrect: 52
Average Score: 24.64



Question 71 of 122

Question Difficulty: **Hard**

30 years Mrs. X is complaining of dry eyes, dry mouth and vaginal dryness on sexual intercourse. There is no significant past medical history. Examination shows Raynaud phenomenon. There is positive serum anti-SSA.

What is the management of choice?

- ○ **Vaginal lubricants and artificial saliva and tears**
- ○ **Azathioprine**
- ○ **Methotrexate**
- ● **Low dose corticosteroids**
- ○ **High dose corticosteroids**

Description

This patient is complaining of Sjogren syndrome. Management is symptomatic by artificial saliva and tears, vaginal lubricants and skin lotions for sicca syndrome.

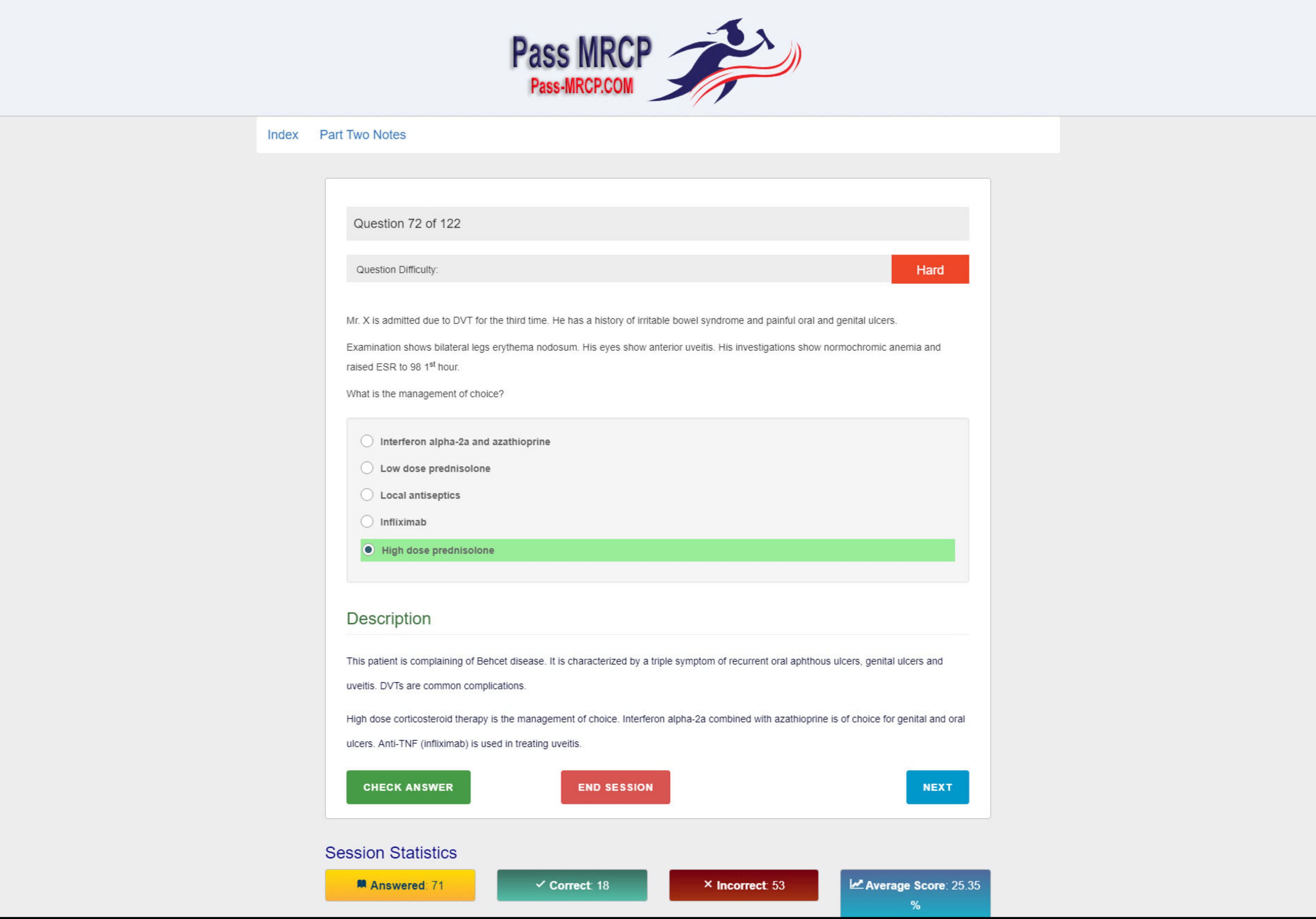
Session Statistics

Answered: 70

✓ **Correct**: 18

✕ **Incorrect**: 52

Average Score: 25.71 %



Question 72 of 122

Question Difficulty: Hard

Mr. X is admitted due to DVT for the third time. He has a history of irritable bowel syndrome and painful oral and genital ulcers.

Examination shows bilateral legs erythema nodosum. His eyes show anterior uveitis. His investigations show normochromic anemia and raised ESR to 98 1st hour.

What is the management of choice?

- ○ Interferon alpha-2a and azathioprine
- ○ Low dose prednisolone
- ○ Local antiseptics
- ○ Infliximab
- ● High dose prednisolone

Description

This patient is complaining of Behcet disease. It is characterized by a triple symptom of recurrent oral aphthous ulcers, genital ulcers and uveitis. DVTs are common complications.

High dose corticosteroid therapy is the management of choice. Interferon alpha-2a combined with azathioprine is of choice for genital and oral ulcers. Anti-TNF (infliximab) is used in treating uveitis.

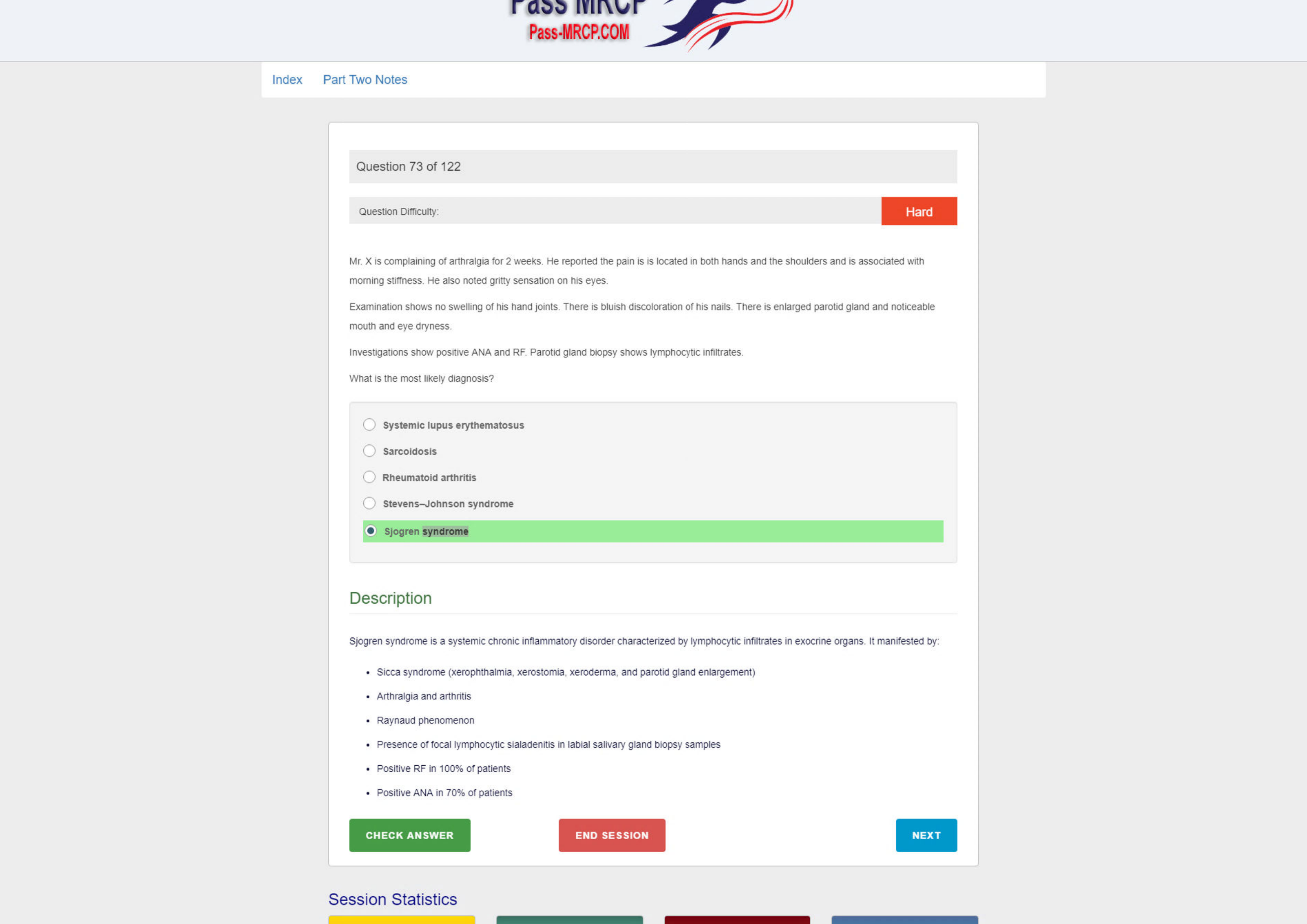
Session Statistics

Answered: 71

✓ Correct: 18

✕ Incorrect: 53

Average Score: 25.35 %



Question 73 of 122

Question Difficulty: **Hard**

Mr. X is complaining of arthralgia for 2 weeks. He reported the pain is is located in both hands and the shoulders and is associated with morning stiffness. He also noted gritty sensation on his eyes.

Examination shows no swelling of his hand joints. There is bluish discoloration of his nails. There is enlarged parotid gland and noticeable mouth and eye dryness.

Investigations show positive ANA and RF. Parotid gland biopsy shows lymphocytic infiltrates.

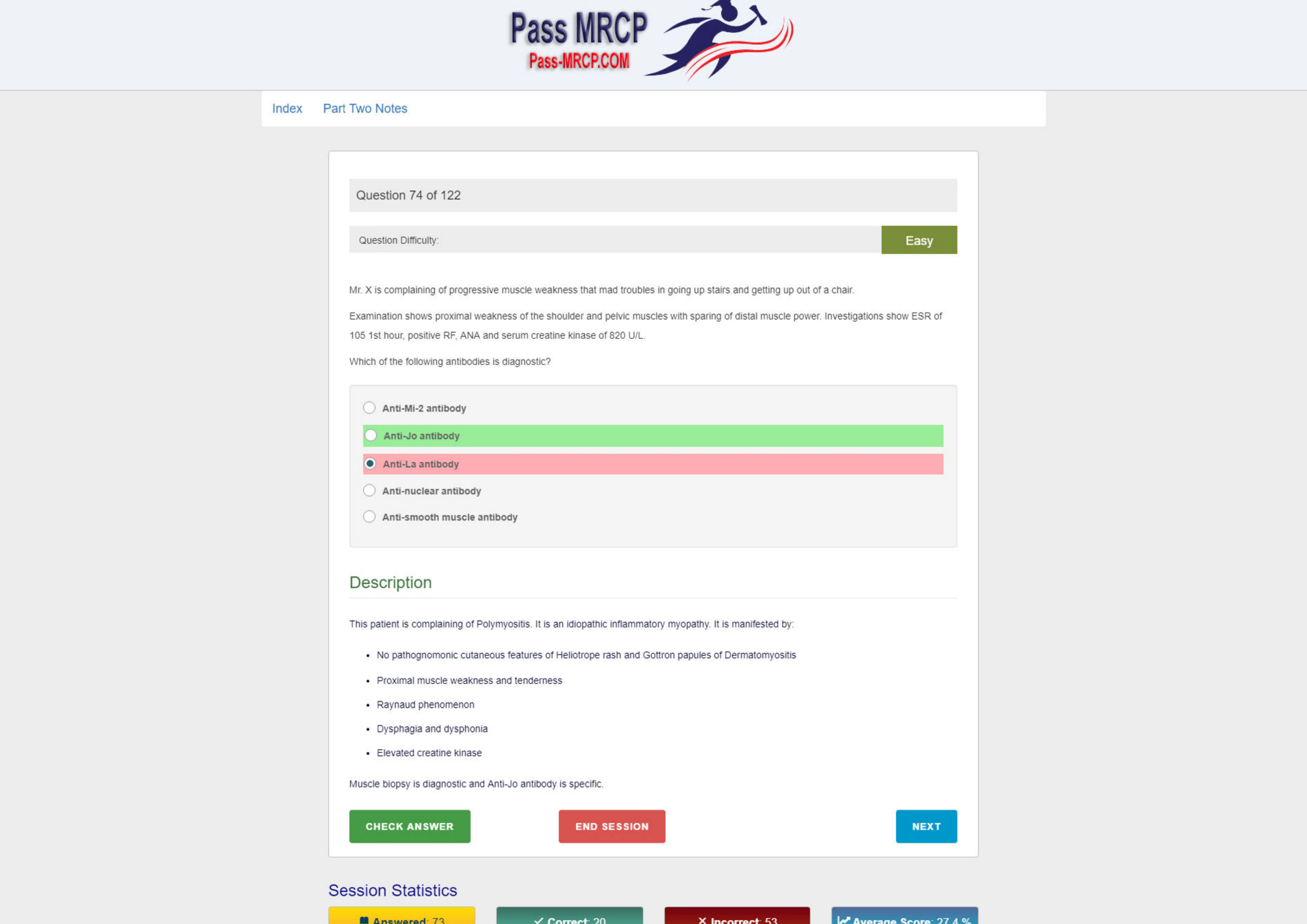
What is the most likely diagnosis?

- ○ **Systemic lupus erythematosus**
- ○ **Sarcoidosis**
- ○ **Rheumatoid arthritis**
- ○ **Stevens–Johnson syndrome**
- ● **Sjogren syndrome**

Description

Sjogren syndrome is a systemic chronic inflammatory disorder characterized by lymphocytic infiltrates in exocrine organs. It manifested by:

- Sicca syndrome (xerophthalmia, xerostomia, xeroderma, and parotid gland enlargement)
- Arthralgia and arthritis
- Raynaud phenomenon
- Presence of focal lymphocytic sialadenitis in labial salivary gland biopsy samples
- Positive RF in 100% of patients
- Positive ANA in 70% of patients



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Part Two Notes

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Question Difficulty: Easy

Mr. X is complaining of progressive muscle weakness that mad troubles in going up stairs and getting up out of a chair.

Examination shows proximal weakness of the shoulder and pelvic muscles with sparing of distal muscle power. Investigations show ESR of 105 1st hour, positive RF, ANA and serum creatine kinase of 820 U/L.

Which of the following antibodies is diagnostic?

○ **Anti-Mi-2 antibody**

○ **Anti-Jo antibody**

● **Anti-La antibody**

○ **Anti-nuclear antibody**

○ **Anti-smooth muscle antibody**

Description

This patient is complaining of Polymyositis. It is an idiopathic inflammatory myopathy. It is manifested by:

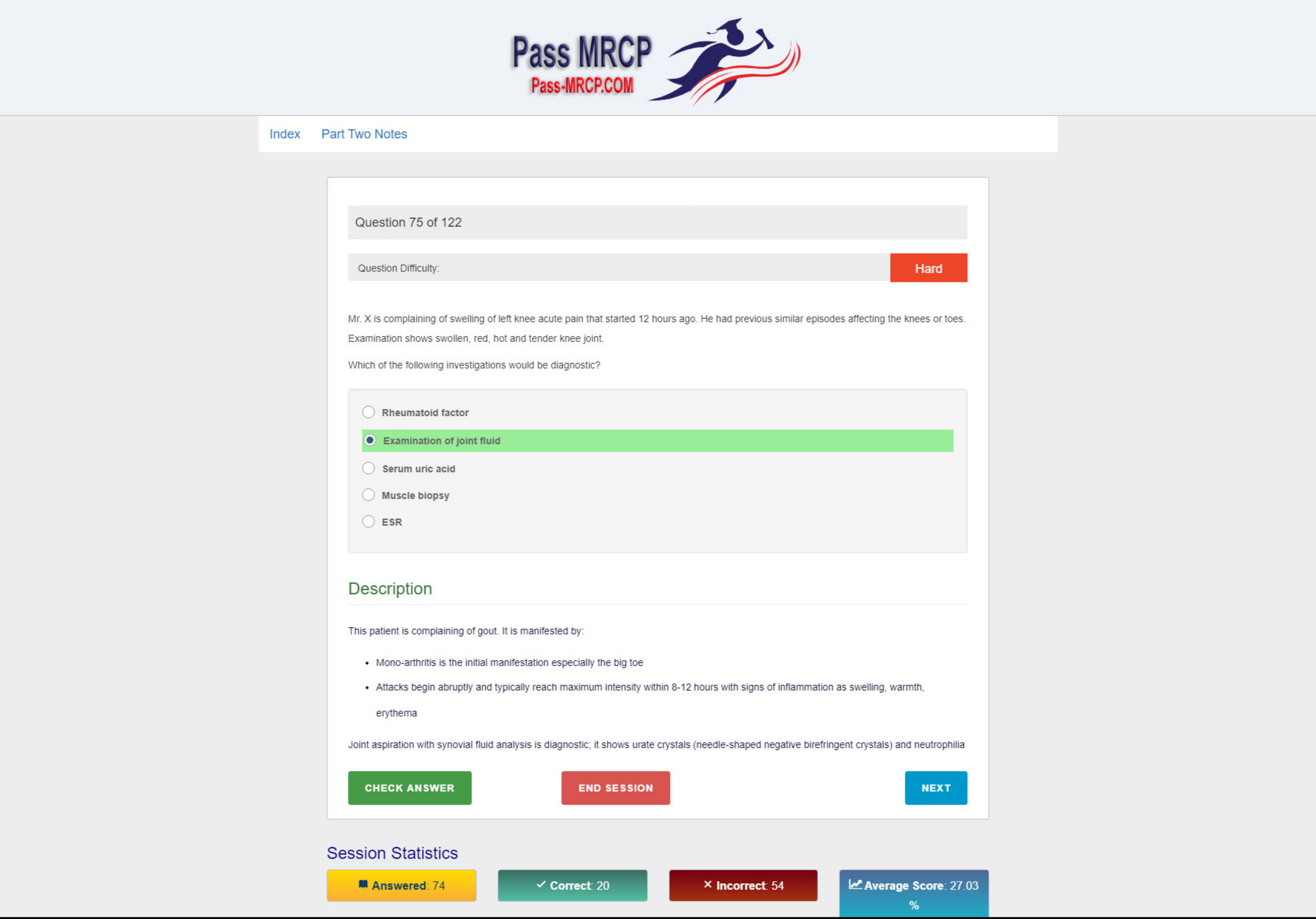
- No pathognomonic cutaneous features of Heliotrope rash and Gottron papules of Dermatomyositis
- Proximal muscle weakness and tenderness
- Raynaud phenomenon
- Dysphagia and dysphonia
- Elevated creatine kinase

Muscle biopsy is diagnostic and Anti-Jo antibody is specific.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 73
✓ Correct: 20
✗ Incorrect: 53
Average Score: 27.4 %



Question 75 of 122

Question Difficulty: **Hard**

Mr. X is complaining of swelling of left knee acute pain that started 12 hours ago. He had previous similar episodes affecting the knees or toes. Examination shows swollen, red, hot and tender knee joint.

Which of the following investigations would be diagnostic?

○ **Rheumatoid factor**
● **Examination of joint fluid**
○ **Serum uric acid**
○ **Muscle biopsy**
○ **ESR**

Description

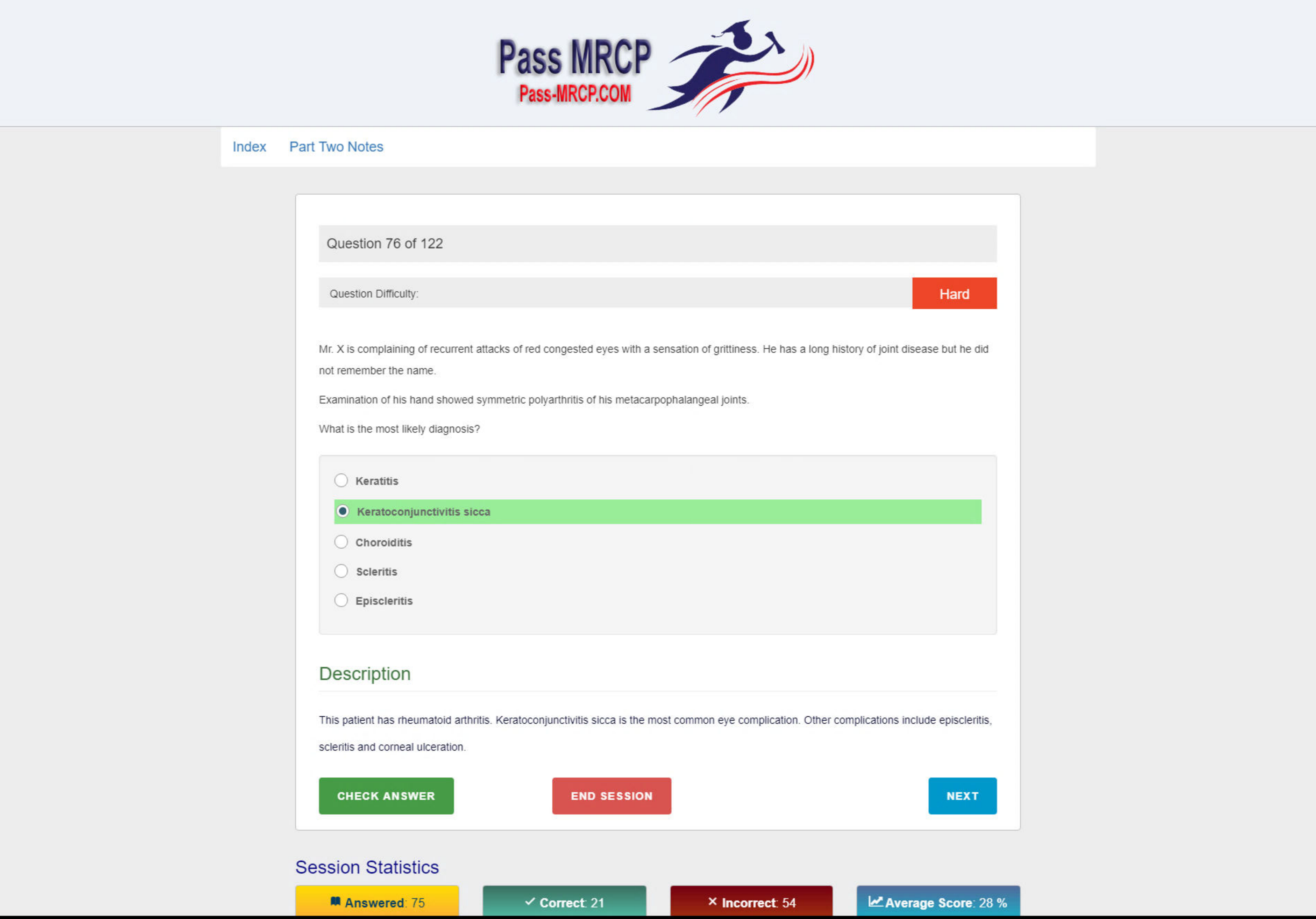
This patient is complaining of gout. It is manifested by:

- Mono-arthritis is the initial manifestation especially the big toe
- Attacks begin abruptly and typically reach maximum intensity within 8-12 hours with signs of inflammation as swelling, warmth, erythema

Joint aspiration with synovial fluid analysis is diagnostic; it shows urate crystals (needle-shaped negative birefringent crystals) and neutrophilia

Session Statistics

Answered: 74
✓ **Correct**: 20
✕ **Incorrect**: 54
Average Score: 27.03 %



Question 76 of 122

Question Difficulty: Hard

Mr. X is complaining of recurrent attacks of red congested eyes with a sensation of grittiness. He has a long history of joint disease but he did not remember the name.

Examination of his hand showed symmetric polyarthritis of his metacarpophalangeal joints.

What is the most likely diagnosis?

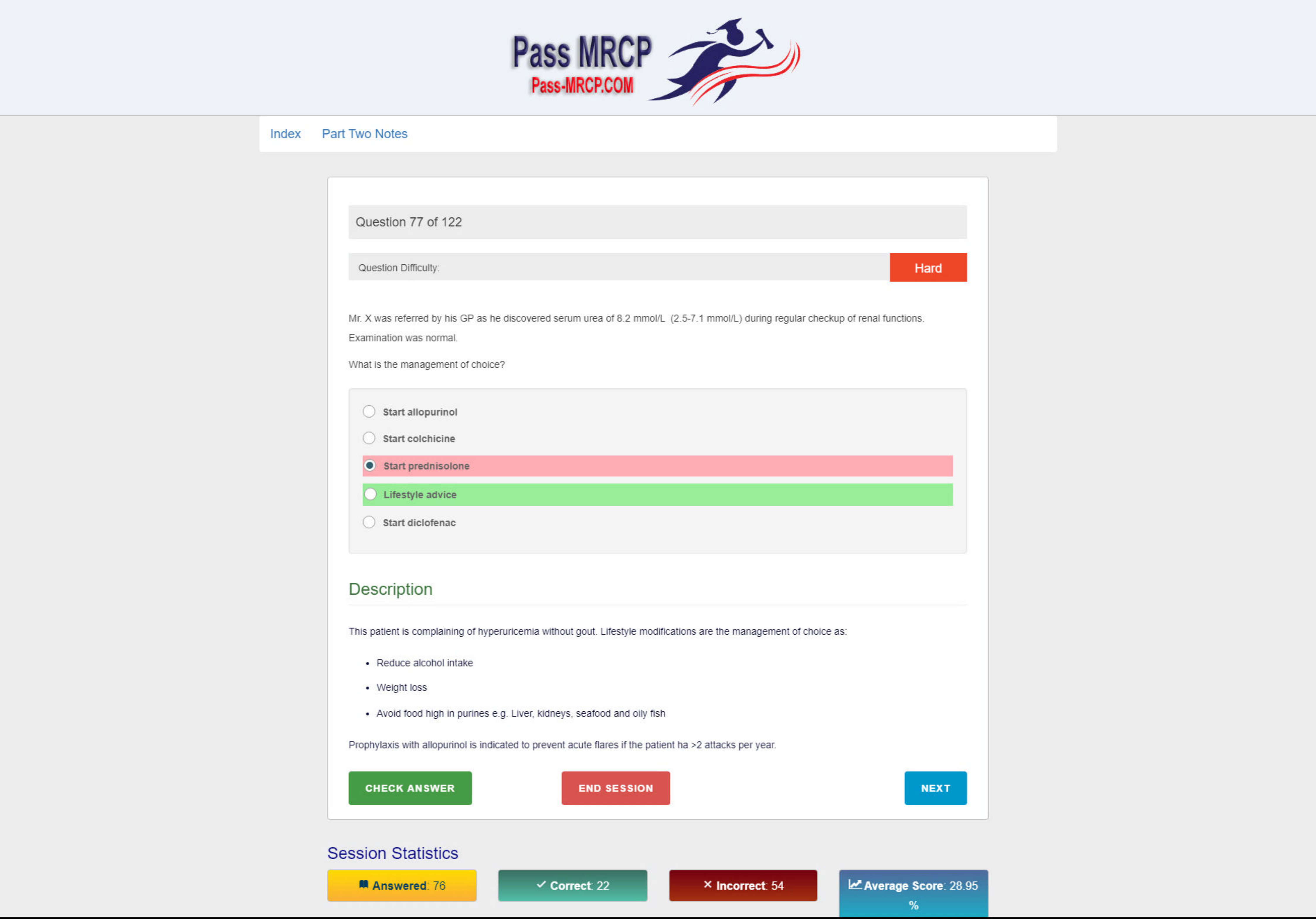
- ○ **Keratitis**
- ● **Keratoconjunctivitis sicca**
- ○ **Choroiditis**
- ○ **Scleritis**
- ○ **Episcleritis**

Description

This patient has rheumatoid arthritis. Keratoconjunctivitis sicca is the most common eye complication. Other complications include episcleritis, scleritis and corneal ulceration.

Session Statistics

Answered: 75
Correct: 21
Incorrect: 54
Average Score: 28 %



Question 77 of 122

Question Difficulty: **Hard**

Mr. X was referred by his GP as he discovered serum urea of 8.2 mmol/L (2.5-7.1 mmol/L) during regular checkup of renal functions. Examination was normal.

What is the management of choice?

○ **Start allopurinol**
○ **Start colchicine**
● **Start prednisolone**
○ **Lifestyle advice**
○ **Start diclofenac**

Description

This patient is complaining of hyperuricemia without gout. Lifestyle modifications are the management of choice as:

- Reduce alcohol intake
- Weight loss
- Avoid food high in purines e.g. Liver, kidneys, seafood and oily fish

Prophylaxis with allopurinol is indicated to prevent acute flares if the patient ha >2 attacks per year.

Session Statistics

Answered: 76
✓ **Correct**: 22
✕ **Incorrect**: 54
Average Score: 28.95 %

Question 78 of 122

Question Difficulty: **Hard**

25 years Mr. X is complaining of spiking pyrexia and arthralgia for 2 months. He also reported chest pain and dyspnea for 6 days. He also noted abdominal swelling.

Examination shows maculopapular pink rash on his trunk and arms. There are swollen distal interphalangeal joints. Abdominal examination shows hepatosplenomegaly. Investigations show:

Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	230 million/mm3	(150-450 million/mm3)
Erythrocyte count	4.5 million/mm3	4.3-5.9 million/mm3
Hemoglobin	8 g/dL	13.5-17.5 g/dL
Rheumatoid factor	Negative	
ANA	Negative	
ESR	88 1st hour	< 10 1st hour

Echo shows pericardial effusion and ECG shows global ST elevation.

What is the most likely diagnosis?

○ **Infectious mononucleosis**
○ **Mixed connective tissue disease**
○ **Adult Still disease**
● **SLE**
○ **Rheumatoid arthritis**

Description

Still disease can refer to:

- Juvenile idiopathic arthritis is the most common chronic rheumatologic disease in children. It affects boys and girls equally till the age of five years of age, beyond that girls are more commonly affected.
- Adult-onset Still disease is a rare disease typically affects 15-35 years old.

Still disease is manifested by:

- Spiking fevers, typically occurring once or twice each day
- Polyarthralgia
- Non-pruritic, macular and salmon colored rash on the trunk and extremities
- Pericarditis
- Interstitial lung disease and pleuritis
- Lymphadenopathy
- Hepatosplenomegaly
- Elevated serum ESR, CRP and ferritin
- All autoantibodies are negative

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 77 ✓ **Correct**: 22 ✕ **Incorrect**: 55 **Average Score**: 28.57 %

Question 79 of 122

Question Difficulty: **Hard**

Mr. X is complaining of fever, abdominal pain myalgia and arthralgia for 2 weeks. He also noted weakness of his left foot and right hand tingling sensation.

Examination shows fever of 38.5°C and blood pressure of 180/100 mmHg. Abdominal examination shows tenderness with guarding and absent bowel sounds. Investigations show:

Hemoglobin	12 g/dL	(13.5-17.5 g/dL)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Serum creatinine	160 mmol/L	(53-106 mmol/L)
ESR	110 1st hour	

Urine analysis shows ++ blood and ++ protein with no casts. Chest X-ray is free and abdominal CT shows mesenteric ischemia.

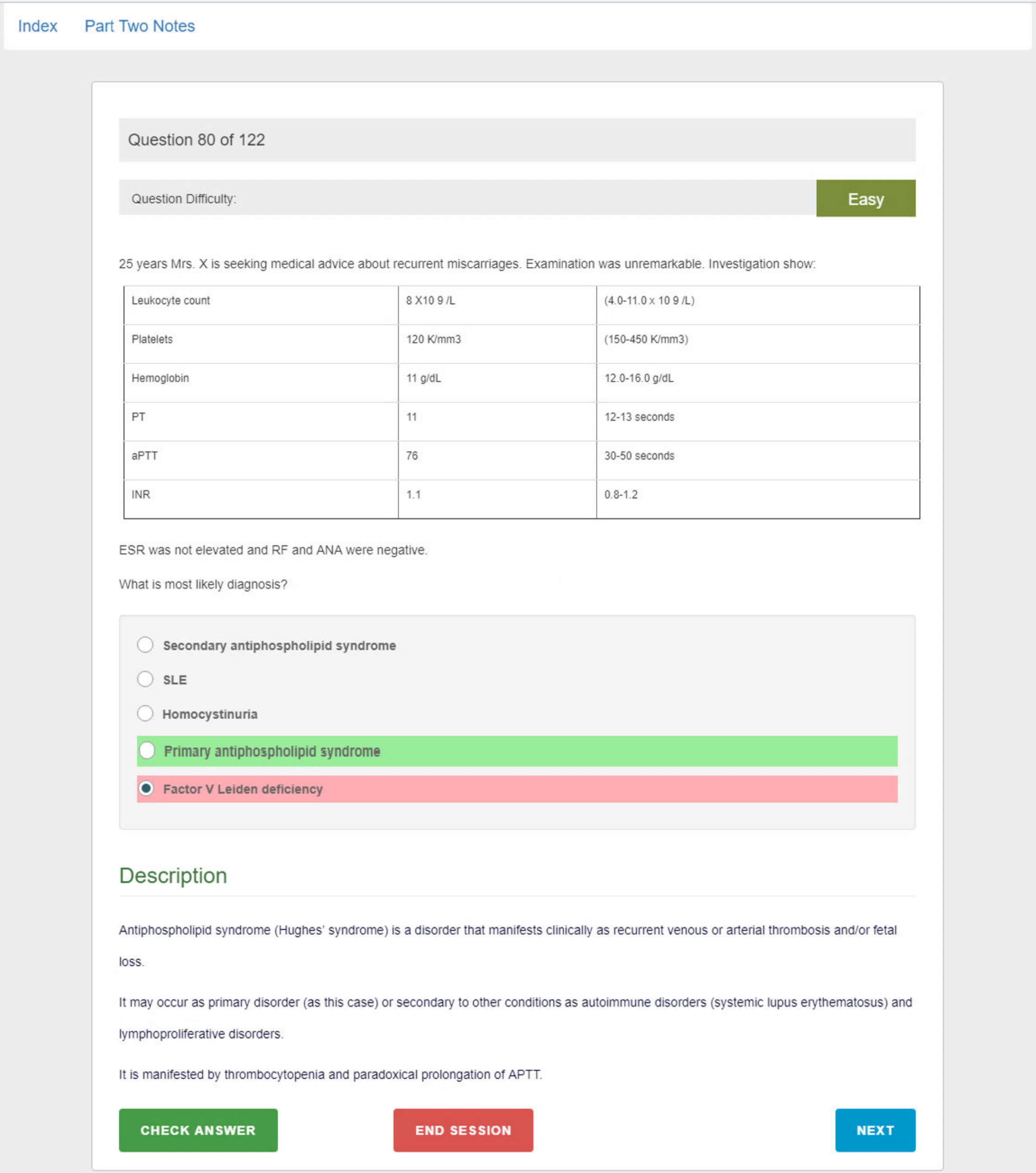
What is the most likely diagnosis?

○ **Polymyalgia rheumatica**
○ **Takayasu arteritis**
● **Churg-Strauss syndrome**
○ **Wegener granulomatosis**
○ **Polyarteritis nodosa**

Description

Polyarteritis nodosa is a systemic vasculitis characterized by necrotizing inflammatory lesions that affect medium-sized and small muscular arteries. It is manifested by:

- Constitutional symptoms as fever, malaise, anorexia and weight loss
- Musculoskeletal symptoms as myalgia and arthralgia or arthritis in large joints
- Skin lesions as purpura, gangrene, nodules, Livedo reticularis, and Raynaud phenomenon
- CNS symptoms as transient cerebral ischemia causing transient monocular blindness, cerebral arteritis causing stroke, encephalopathy and seizures
- Mononeuropathy or polyneuropathy
- GIT symptoms as mesenteric ischemia



Question 80 of 122

Question Difficulty: **Easy**

25 years Mrs. X is seeking medical advice about recurrent miscarriages. Examination was unremarkable. Investigation show:

Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	120 K/mm3	(150-450 K/mm3)
Hemoglobin	11 g/dL	12.0-16.0 g/dL
PT	11	12-13 seconds
aPTT	76	30-50 seconds
INR	1.1	0.8-1.2

ESR was not elevated and RF and ANA were negative.

What is most likely diagnosis?

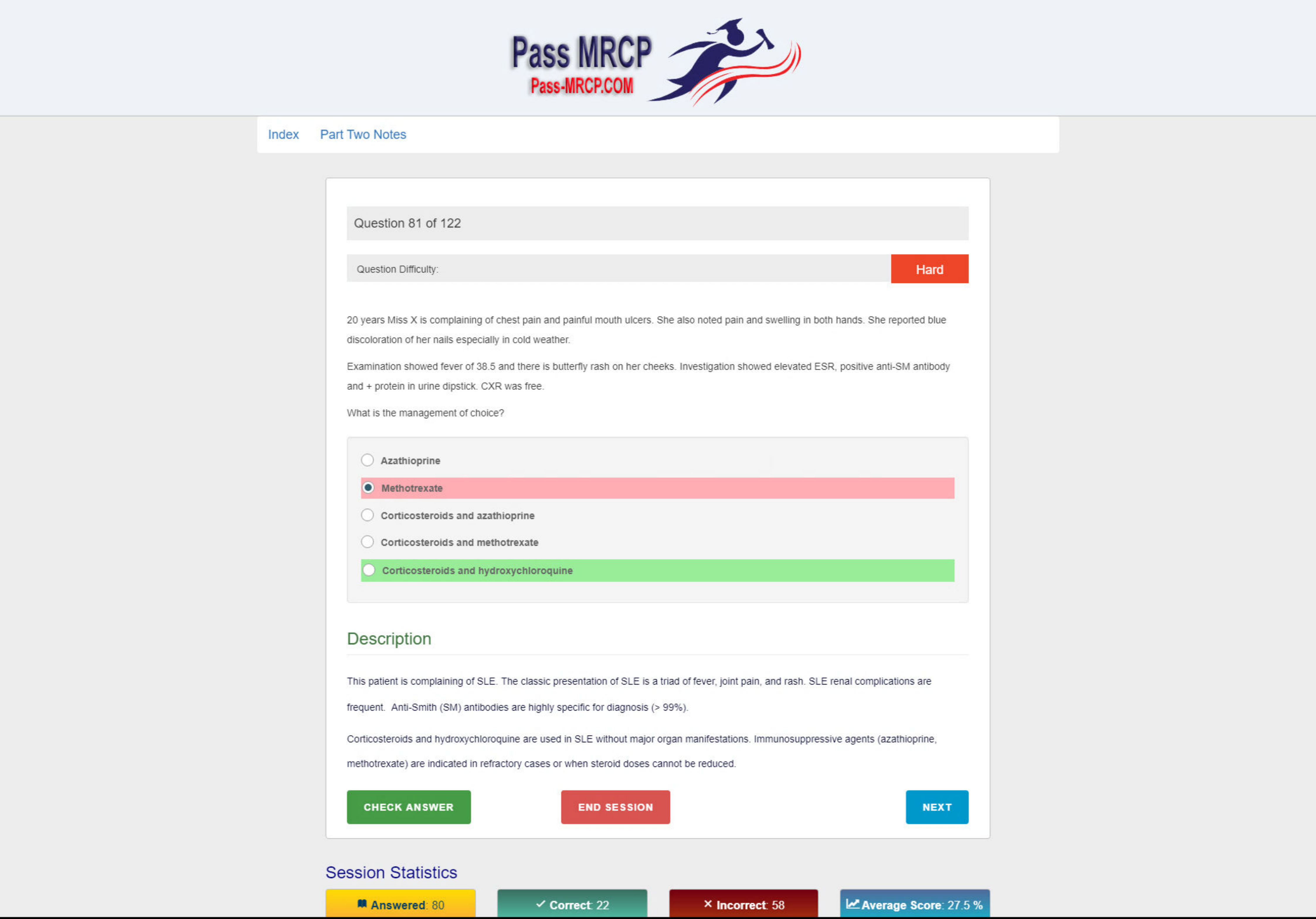
- ○ **Secondary antiphospholipid syndrome**
- ○ **SLE**
- ○ **Homocystinuria**
- ○ **Primary antiphospholipid syndrome**
- ● **Factor V Leiden deficiency**

Description

Antiphospholipid syndrome (Hughes' syndrome) is a disorder that manifests clinically as recurrent venous or arterial thrombosis and/or fetal loss.

It may occur as primary disorder (as this case) or secondary to other conditions as autoimmune disorders (systemic lupus erythematosus) and lymphoproliferative disorders.

It is manifested by thrombocytopenia and paradoxical prolongation of APTT.



Question 81 of 122

Question Difficulty: Hard

20 years Miss X is complaining of chest pain and painful mouth ulcers. She also noted pain and swelling in both hands. She reported blue discoloration of her nails especially in cold weather.

Examination showed fever of 38.5 and there is butterfly rash on her cheeks. Investigation showed elevated ESR, positive anti-SM antibody and + protein in urine dipstick. CXR was free.

What is the management of choice?

- ○ **Azathioprine**
- ● **Methotrexate**
- ○ **Corticosteroids and azathioprine**
- ○ **Corticosteroids and methotrexate**
- ○ **Corticosteroids and hydroxychloroquine**

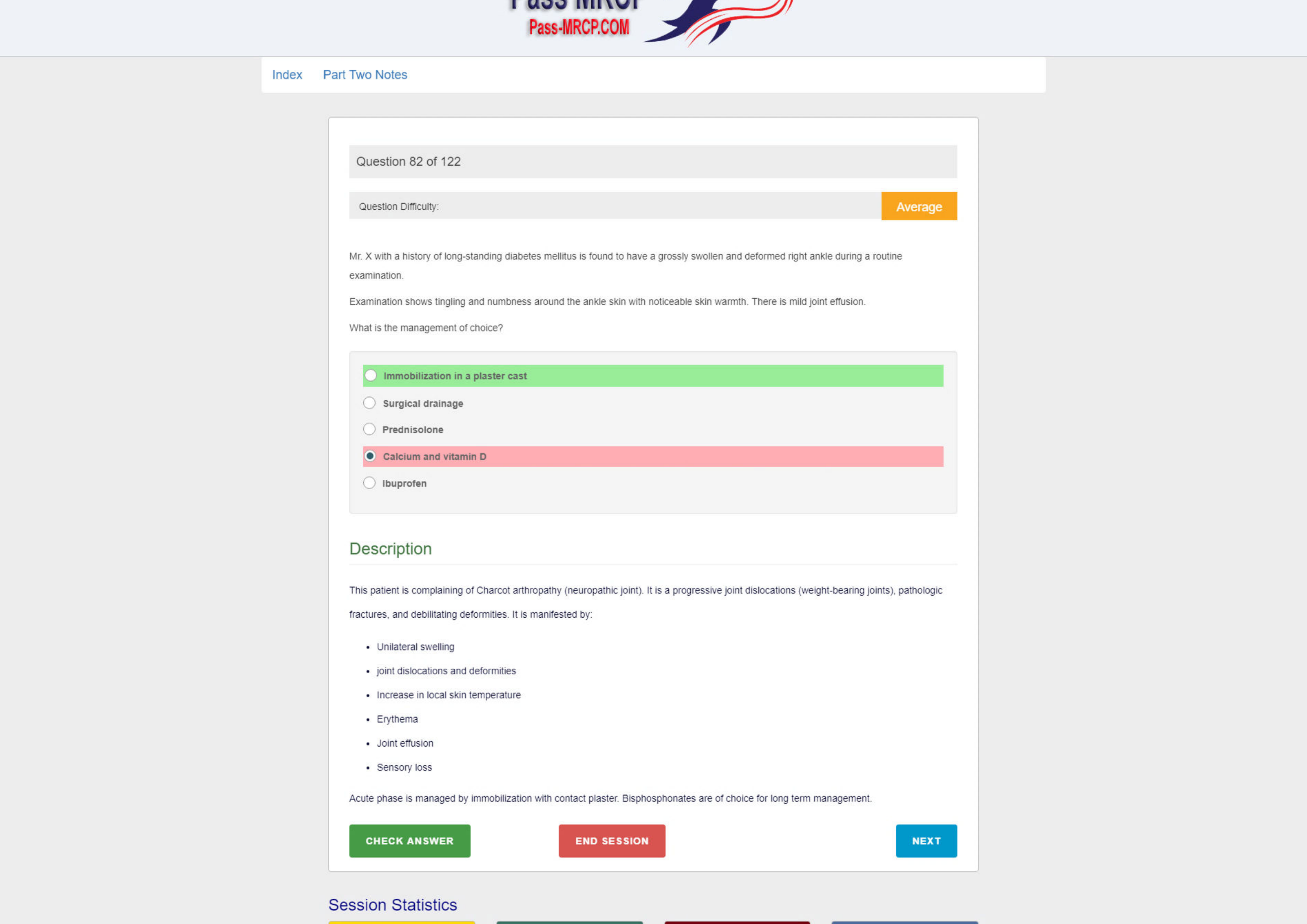
Description

This patient is complaining of SLE. The classic presentation of SLE is a triad of fever, joint pain, and rash. SLE renal complications are frequent. Anti-Smith (SM) antibodies are highly specific for diagnosis (> 99%).

Corticosteroids and hydroxychloroquine are used in SLE without major organ manifestations. Immunosuppressive agents (azathioprine, methotrexate) are indicated in refractory cases or when steroid doses cannot be reduced.

Session Statistics

Answered: 80
✓ **Correct**: 22
✕ **Incorrect**: 58
Average Score: 27.5 %



Question 82 of 122

Question Difficulty: Average

Mr. X with a history of long-standing diabetes mellitus is found to have a grossly swollen and deformed right ankle during a routine examination.

Examination shows tingling and numbness around the ankle skin with noticeable skin warmth. There is mild joint effusion.

What is the management of choice?

○ **Immobilization in a plaster cast**
○ **Surgical drainage**
○ **Prednisolone**
● **Calcium and vitamin D**
○ **Ibuprofen**

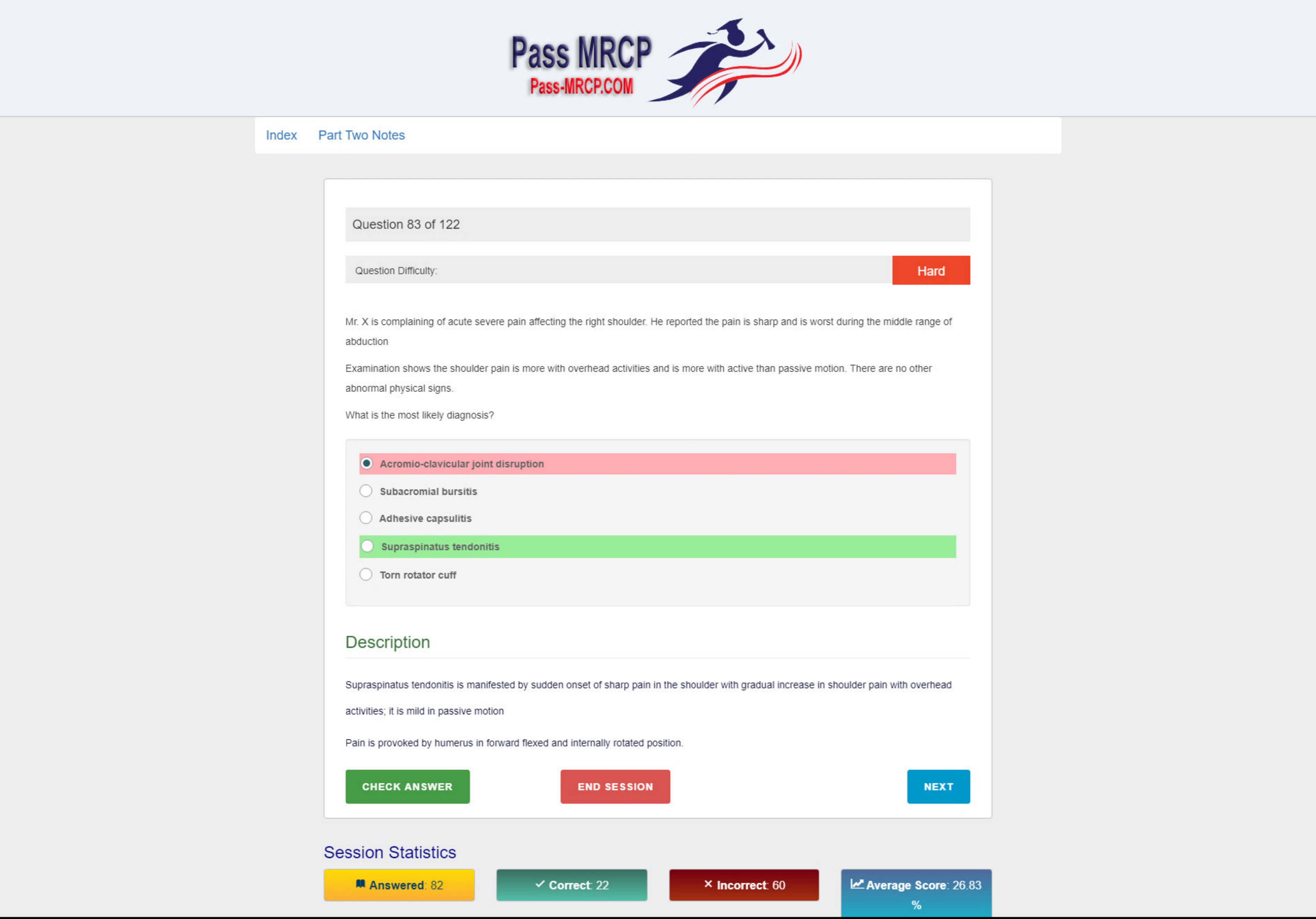
Description

This patient is complaining of Charcot arthropathy (neuropathic joint). It is a progressive joint dislocations (weight-bearing joints), pathologic fractures, and debilitating deformities. It is manifested by:

- Unilateral swelling
- joint dislocations and deformities
- Increase in local skin temperature
- Erythema
- Joint effusion
- Sensory loss

Acute phase is managed by immobilization with contact plaster. Bisphosphonates are of choice for long term management.

Session Statistics



Question 83 of 122

Question Difficulty: Hard

Mr. X is complaining of acute severe pain affecting the right shoulder. He reported the pain is sharp and is worst during the middle range of abduction

Examination shows the shoulder pain is more with overhead activities and is more with active than passive motion. There are no other abnormal physical signs.

What is the most likely diagnosis?

- ● Acromio-clavicular joint disruption
- ○ Subacromial bursitis
- ○ Adhesive capsulitis
- ○ Supraspinatus tendonitis
- ○ Torn rotator cuff

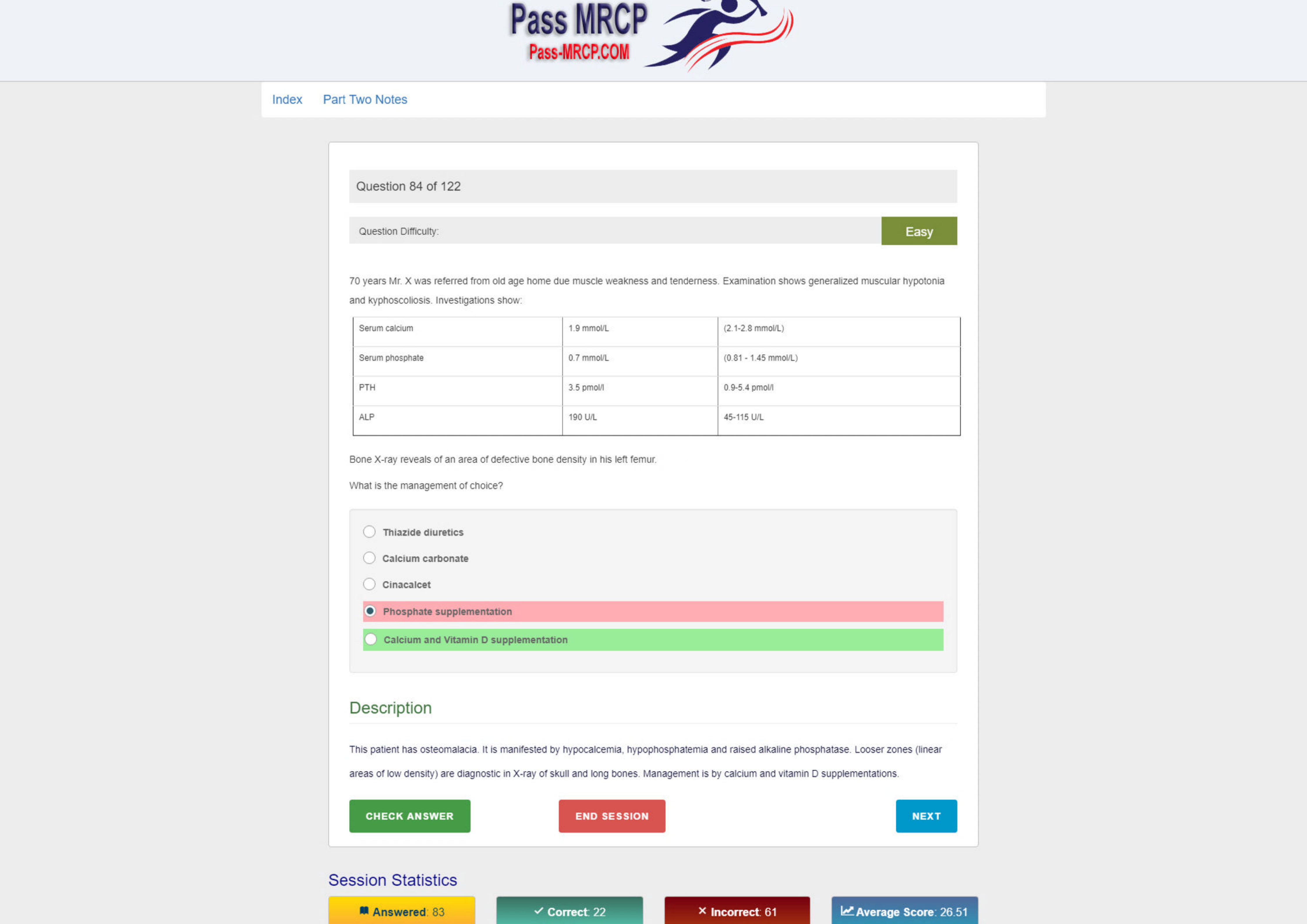
Description

Supraspinatus tendonitis is manifested by sudden onset of sharp pain in the shoulder with gradual increase in shoulder pain with overhead activities; it is mild in passive motion

Pain is provoked by humerus in forward flexed and internally rotated position.

Session Statistics

Answered: 82
✓ Correct: 22
✕ Incorrect: 60
Average Score: 26.83 %



Question 84 of 122

Question Difficulty: Easy

70 years Mr. X was referred from old age home due muscle weakness and tenderness. Examination shows generalized muscular hypotonia and kyphoscoliosis. Investigations show:

Serum calcium	1.9 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	0.7 mmol/L	(0.81 - 1.45 mmol/L)
PTH	3.5 pmol/l	0.9-5.4 pmol/l
ALP	190 U/L	45-115 U/L

Bone X-ray reveals of an area of defective bone density in his left femur.

What is the management of choice?

- ○ **Thiazide diuretics**
- ○ **Calcium carbonate**
- ○ **Cinacalcet**
- ● **Phosphate supplementation**
- ○ **Calcium and Vitamin D supplementation**

Description

This patient has osteomalacia. It is manifested by hypocalcemia, hypophosphatemia and raised alkaline phosphatase. Looser zones (linear areas of low density) are diagnostic in X-ray of skull and long bones. Management is by calcium and vitamin D supplementations.

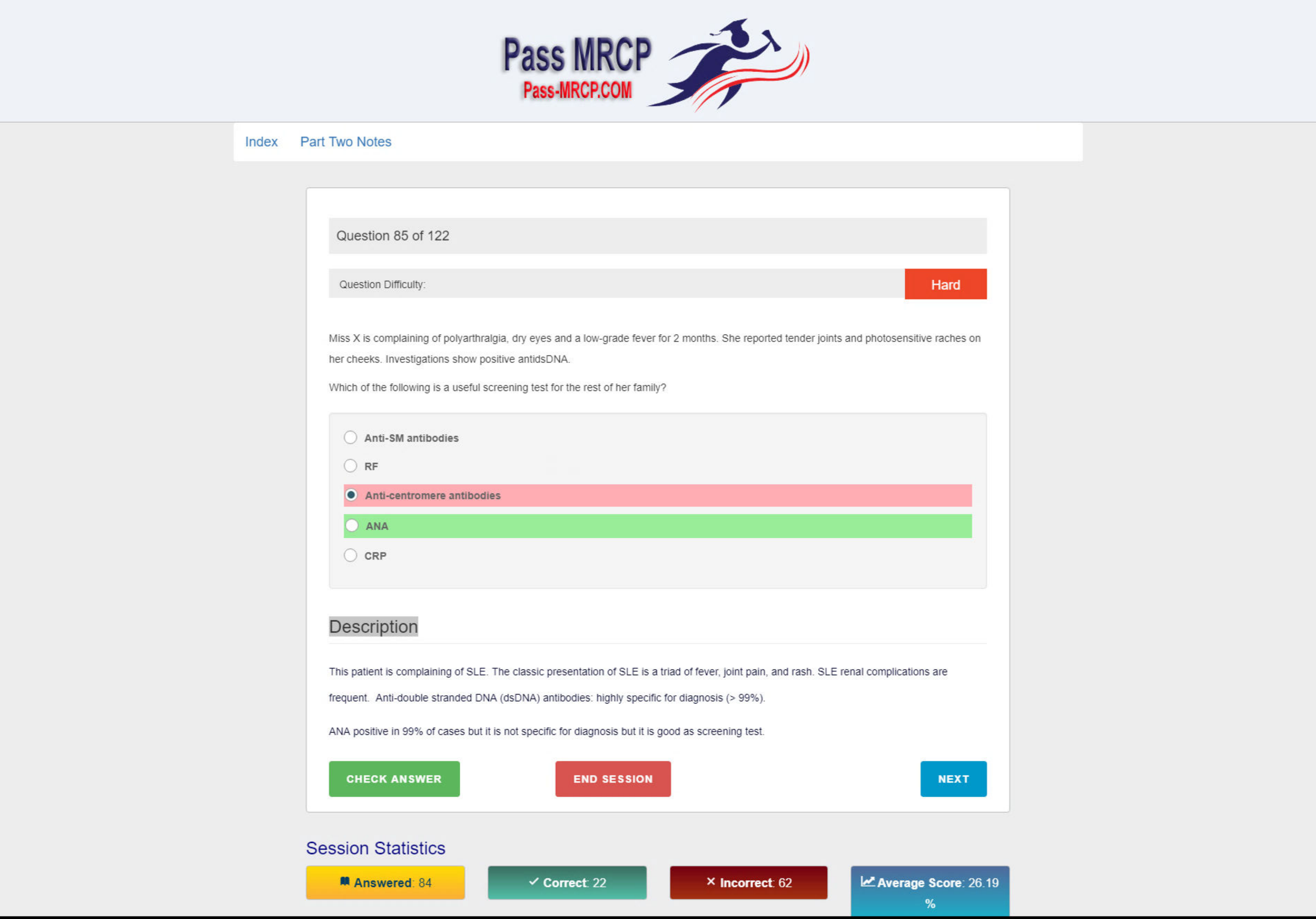
Session Statistics

Answered: 83

✓ **Correct**: 22

✕ **Incorrect**: 61

Average Score: 26.51



Question 85 of 122

Question Difficulty: Hard

Miss X is complaining of polyarthralgia, dry eyes and a low-grade fever for 2 months. She reported tender joints and photosensitive raches on her cheeks. Investigations show positive antidsDNA.

Which of the following is a useful screening test for the rest of her family?

○ Anti-SM antibodies
○ RF
● Anti-centromere antibodies
○ ANA
○ CRP

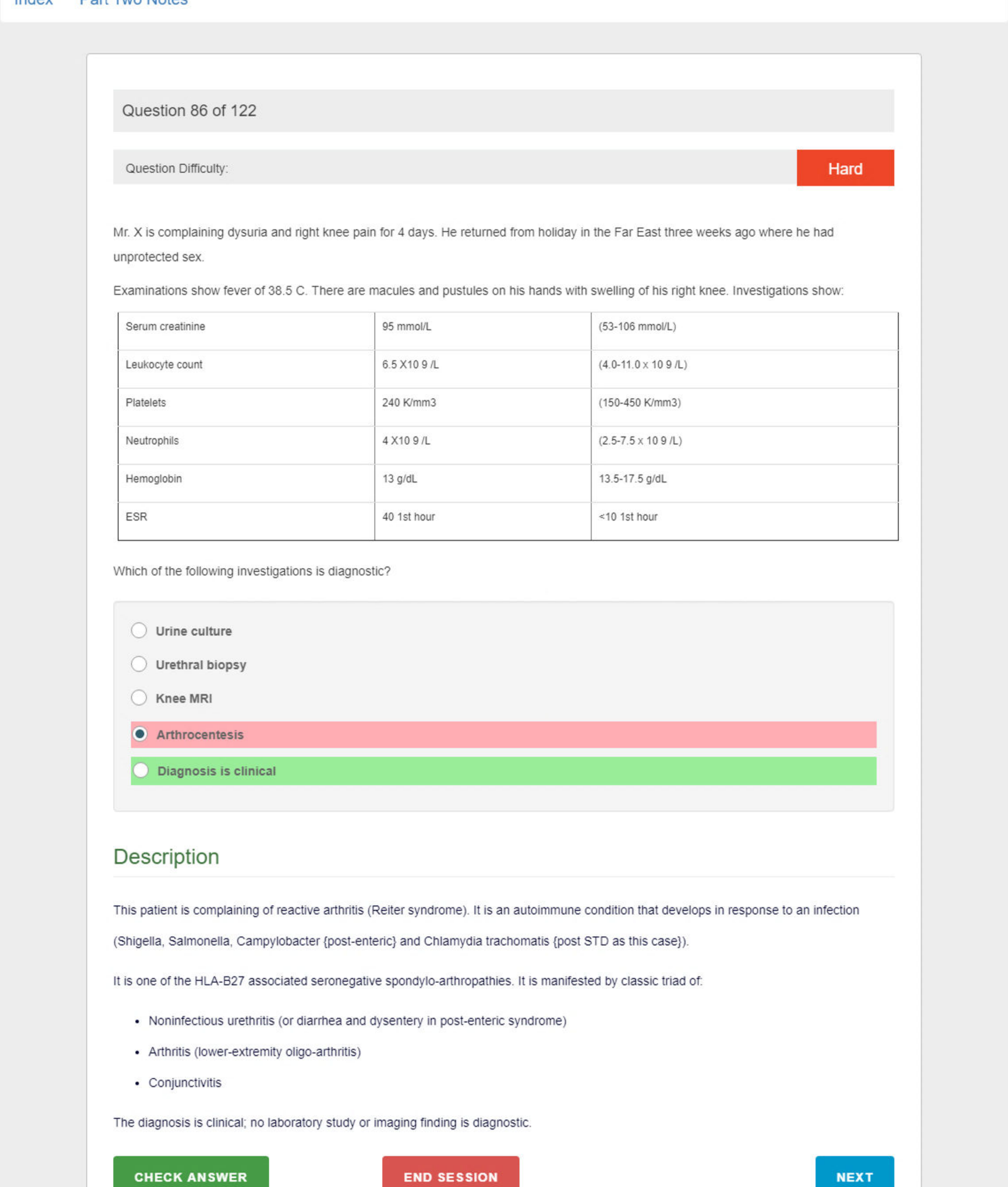
Description

This patient is complaining of SLE. The classic presentation of SLE is a triad of fever, joint pain, and rash. SLE renal complications are frequent. Anti-double stranded DNA (dsDNA) antibodies: highly specific for diagnosis (> 99%).

ANA positive in 99% of cases but it is not specific for diagnosis but it is good as screening test.

Session Statistics

Answered: 84
✓ Correct: 22
✕ Incorrect: 62
Average Score: 26.19 %



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Question Difficulty: Hard

Mr. X is complaining dysuria and right knee pain for 4 days. He returned from holiday in the Far East three weeks ago where he had unprotected sex.

Examinations show fever of 38.5 C. There are macules and pustules on his hands with swelling of his right knee. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	6.5 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	240 K/mm3	(150-450 K/mm3)
Neutrophils	4 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	40 1st hour	<10 1st hour

Which of the following investigations is diagnostic?

○ **Urine culture**
○ **Urethral biopsy**
○ **Knee MRI**
● **Arthrocentesis**
○ **Diagnosis is clinical**

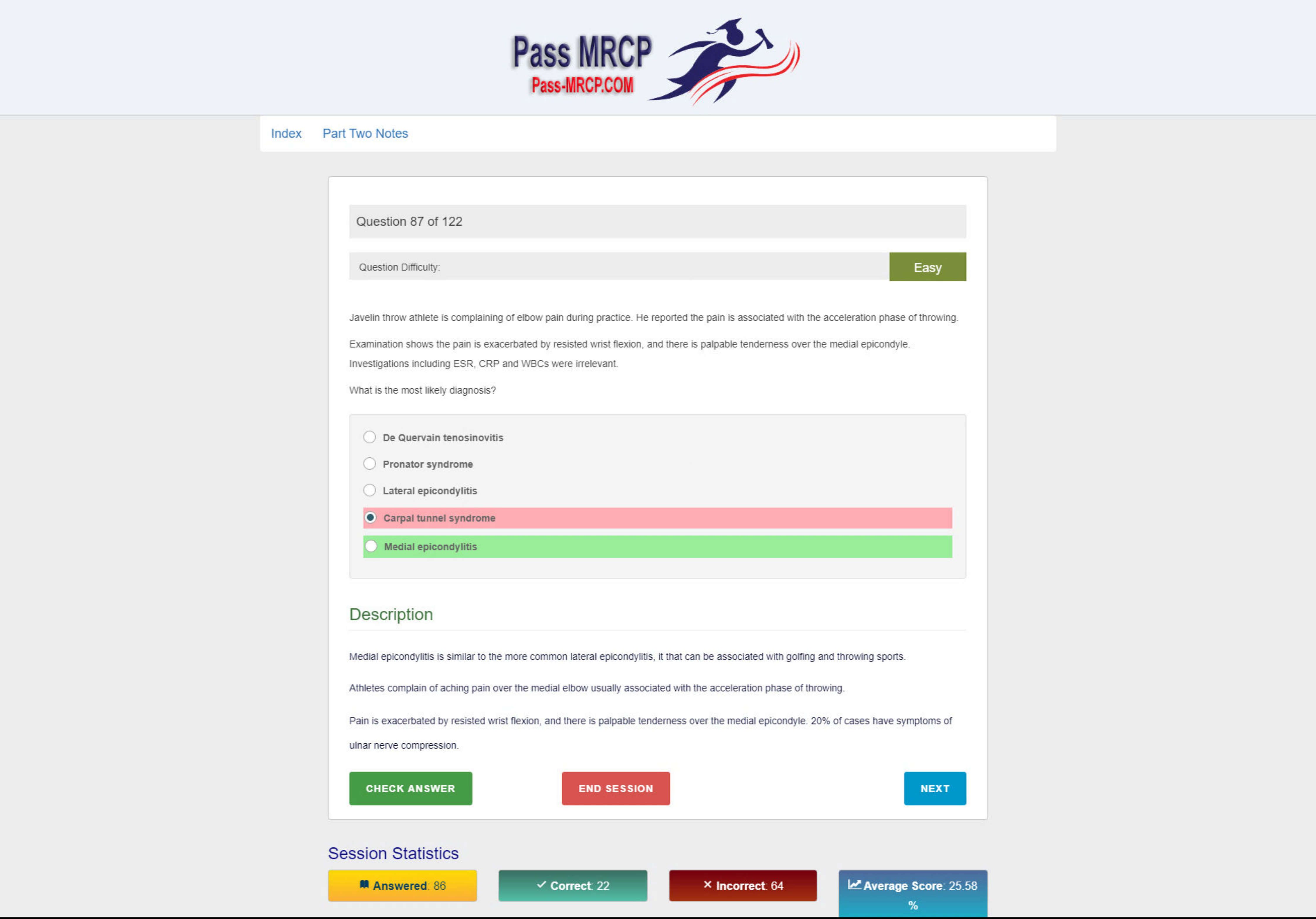
Description

This patient is complaining of reactive arthritis (Reiter syndrome). It is an autoimmune condition that develops in response to an infection (Shigella, Salmonella, Campylobacter {post-enteric} and Chlamydia trachomatis {post STD as this case}).

It is one of the HLA-B27 associated seronegative spondylo-arthropathies. It is manifested by classic triad of:

- Noninfectious urethritis (or diarrhea and dysentery in post-enteric syndrome)
- Arthritis (lower-extremity oligo-arthritis)
- Conjunctivitis

The diagnosis is clinical; no laboratory study or imaging finding is diagnostic.



Question 87 of 122

Question Difficulty: Easy

Javelin throw athlete is complaining of elbow pain during practice. He reported the pain is associated with the acceleration phase of throwing.

Examination shows the pain is exacerbated by resisted wrist flexion, and there is palpable tenderness over the medial epicondyle. Investigations including ESR, CRP and WBCs were irrelevant.

What is the most likely diagnosis?

- ○ **De Quervain tenosinovitis**
- ○ **Pronator syndrome**
- ○ **Lateral epicondylitis**
- ● **Carpal tunnel syndrome**
- ○ **Medial epicondylitis**

Description

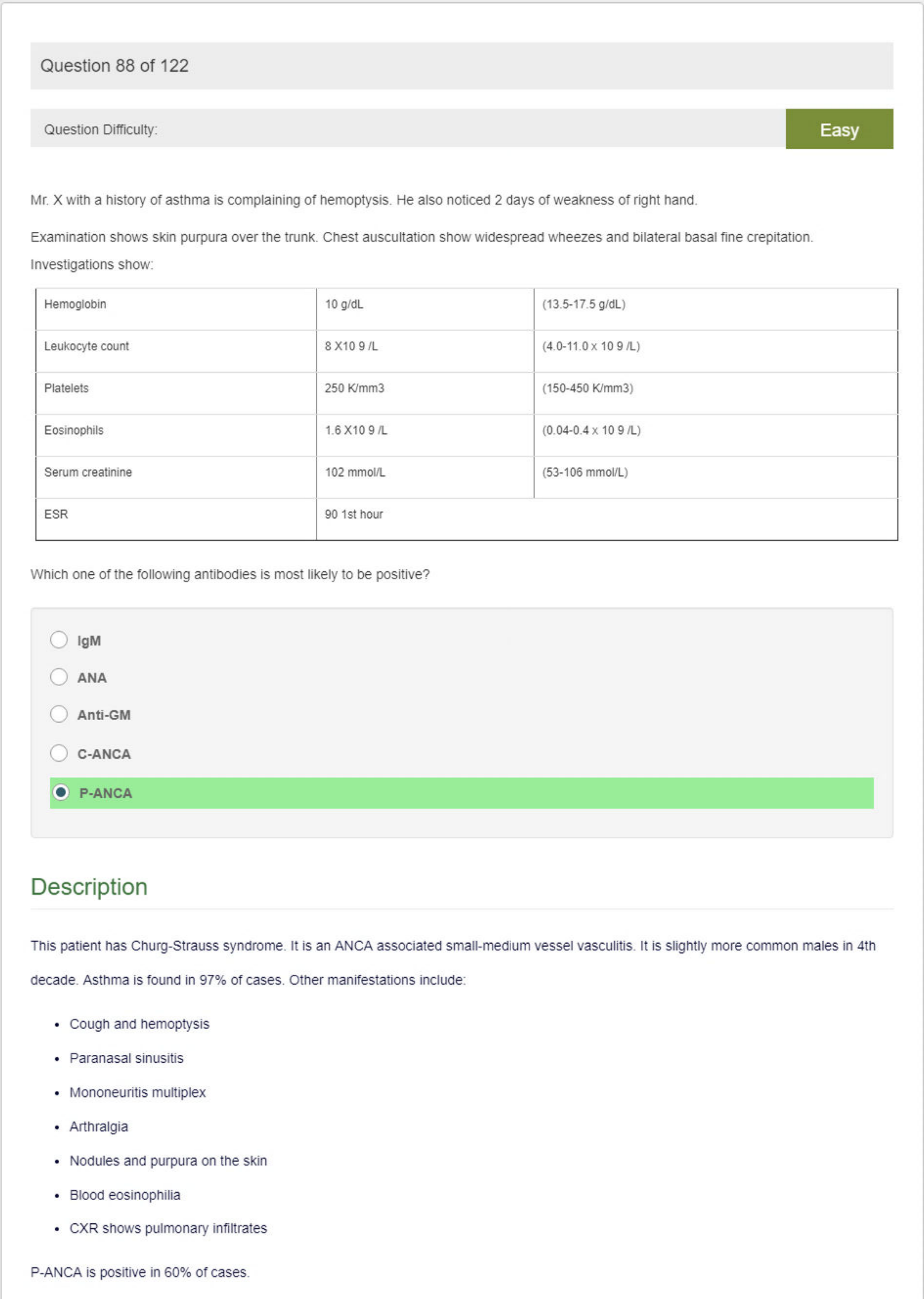
Medial epicondylitis is similar to the more common lateral epicondylitis, it that can be associated with golfing and throwing sports.

Athletes complain of aching pain over the medial elbow usually associated with the acceleration phase of throwing.

Pain is exacerbated by resisted wrist flexion, and there is palpable tenderness over the medial epicondyle. 20% of cases have symptoms of ulnar nerve compression.

Session Statistics

Answered: 86
✓ **Correct**: 22
✕ **Incorrect**: 64
Average Score: 25.58 %



Question 88 of 122

Question Difficulty: **Easy**

Mr. X with a history of asthma is complaining of hemoptysis. He also noticed 2 days of weakness of right hand.

Examination shows skin purpura over the trunk. Chest auscultation show widespread wheezes and bilateral basal fine crepitation. Investigations show:

Hemoglobin	10 g/dL	(13.5-17.5 g/dL)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Eosinophils	1.6 X10 9 /L	(0.04-0.4 x 10 9 /L)
Serum creatinine	102 mmol/L	(53-106 mmol/L)
ESR	90 1st hour	

Which one of the following antibodies is most likely to be positive?

○ **IgM**
○ **ANA**
○ **Anti-GM**
○ **C-ANCA**
● **P-ANCA**

Description

This patient has Churg-Strauss syndrome. It is an ANCA associated small-medium vessel vasculitis. It is slightly more common males in 4th decade. Asthma is found in 97% of cases. Other manifestations include:

- Cough and hemoptysis
- Paranasal sinusitis
- Mononeuritis multiplex
- Arthralgia
- Nodules and purpura on the skin
- Blood eosinophilia
- CXR shows pulmonary infiltrates

P-ANCA is positive in 60% of cases.

Question 89 of 122

Question Difficulty: **Hard**

35 years old Mrs. X is complaining of progressive headache, nausea, vertigo and visual disturbance. She also mentioned severe lower limb claudication on walking 2 blocks. She has 3 previous episodes of transient ischemic attacks.

Examination shows blood pressure is 190/110 mmHg and her femoral pulses are weak, with a radio-femoral delay and lower limb pressure is 130/80 mmHg in both legs. There is bilateral leg erythema nodosum.

What is the most likely diagnosis?

○ **Churg-Strauss syndrome**
○ **Polyarteritis nodosa**
○ **Cervical rib syndrome**
● **Takayasu disease**
○ **Coarctation of the descending aorta**

Description

Takayasu arteritis is a rare, systemic, inflammatory large-vessel vasculitis of unknown etiology that most commonly affects women of childbearing age.

It causes granulomatous inflammation of the aorta and its major branches. It is manifested by:

Cardiac and vascular features

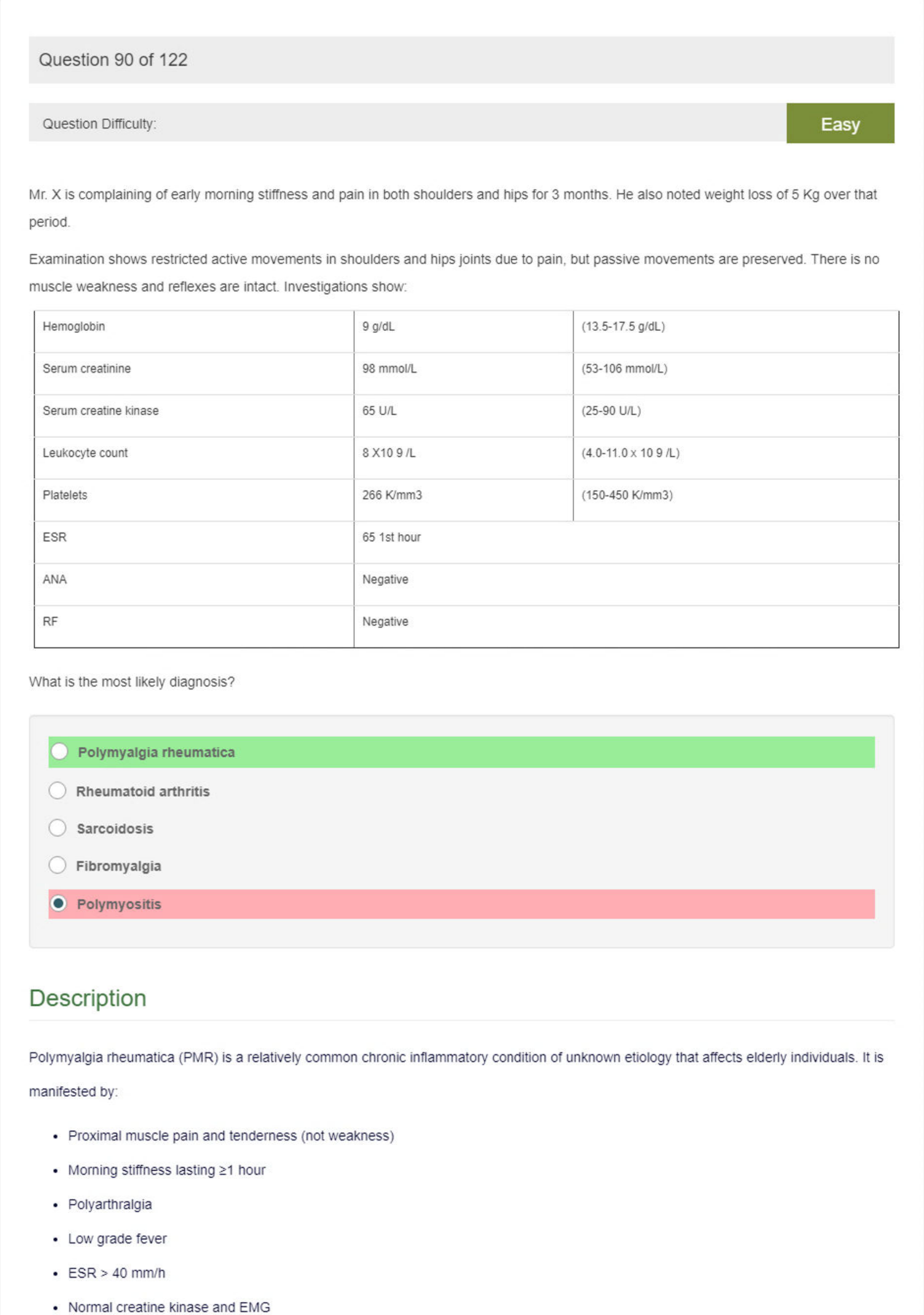
- Blood pressure difference of extremities (45%-69%)
- Lower limb claudication
- Renal artery stenosis
- Aortic regurgitation
- Myocardial infarction

Neurologic features

- Visual disturbance due to common carotid and vertebral artery disease
- Stroke
- Transient ischemic attacks

Dermatologic features

- Erythema nodosum
- Pyoderma gangrenosum



Question 90 of 122

Question Difficulty: **Easy**

Mr. X is complaining of early morning stiffness and pain in both shoulders and hips for 3 months. He also noted weight loss of 5 Kg over that period.

Examination shows restricted active movements in shoulders and hips joints due to pain, but passive movements are preserved. There is no muscle weakness and reflexes are intact. Investigations show:

Hemoglobin	9 g/dL	(13.5-17.5 g/dL)
Serum creatinine	98 mmol/L	(53-106 mmol/L)
Serum creatine kinase	65 U/L	(25-90 U/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	266 K/mm3	(150-450 K/mm3)
ESR	65 1st hour	
ANA	Negative	
RF	Negative	

What is the most likely diagnosis?

- ○ **Polymyalgia rheumatica**
- ○ **Rheumatoid arthritis**
- ○ **Sarcoidosis**
- ○ **Fibromyalgia**
- ● **Polymyositis**

Description

Polymyalgia rheumatica (PMR) is a relatively common chronic inflammatory condition of unknown etiology that affects elderly individuals. It is manifested by:

- Proximal muscle pain and tenderness (not weakness)
- Morning stiffness lasting ≥1 hour
- Polyarthralgia
- Low grade fever
- ESR > 40 mm/h
- Normal creatine kinase and EMG

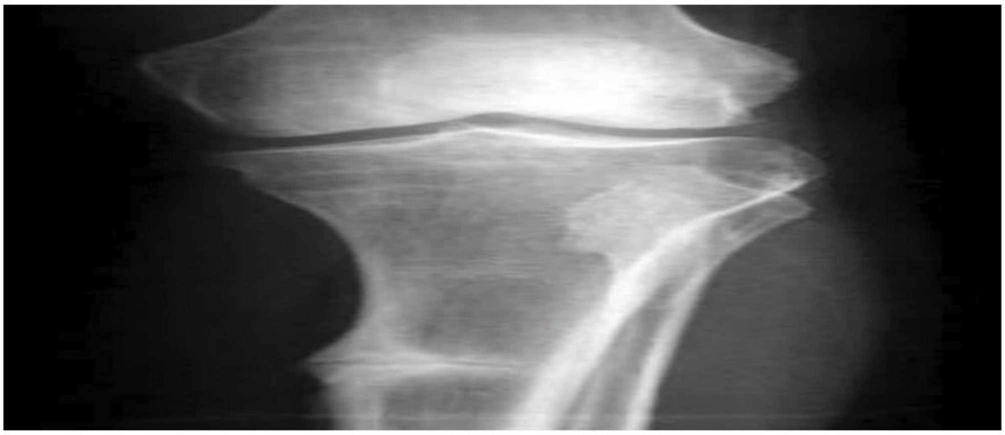
Question 91 of 122

Question Difficulty: Average

72 years Mr. X was referred from nursing home resident complaining from diffuse joint and bone pain. Examination shows generalized muscular hypotonia. Investigations show:

Serum calcium	1.9 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	0.5 mmol/L	(0.81 - 1.45 mmol/L)
PTH	5.8 pmol/l	0.9-5.4 pmol/l
ALP	260 U/L	45-115 U/L

Bone X ray is shown in the image. DXA scan shows T score of -0.8.



What is the most likely diagnosis?

○ **Osteomalacia**
● **Primary hyperparathyroidism**
○ **Osteoporosis**
○ **Osteolytic metastasis**
○ **Renal osteodystrophy**

Description

Osteomalacia (adult form of rickets) is the softening of the bones caused by defective bone mineralization secondary to reduced vitamin D, phosphate and calcium.

It is manifested by hypocalcemia, hypophosphatemia and raised alkaline phosphatase. The parathyroid hormone may be elevated due to hypocalcemia.

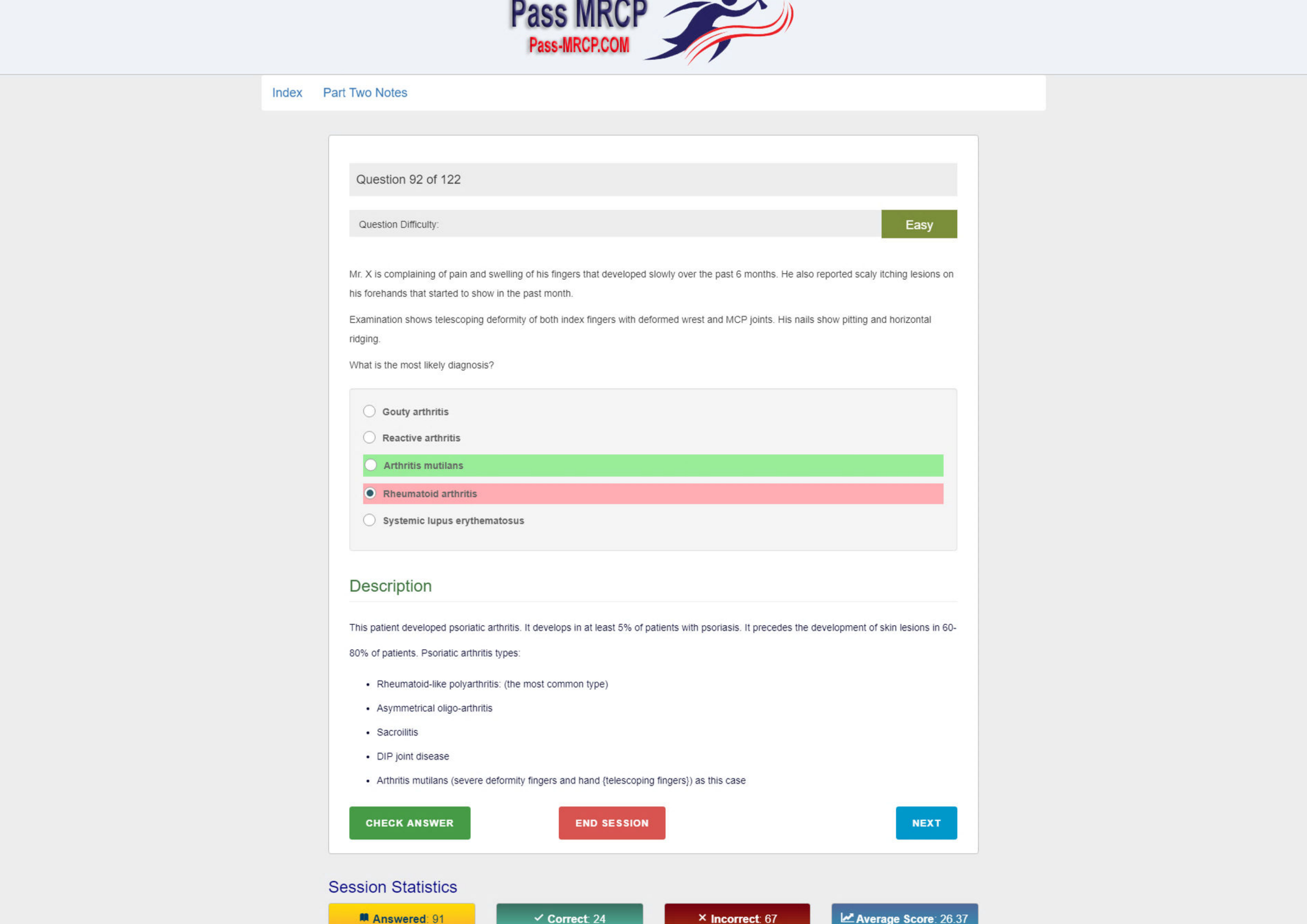
Primary hyperparathyroidism is associated with hypercalcemia.

DXA scan excludes osteoporosis (normal T > -1).

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 90 ✓ **Correct**: 24 ✕ **Incorrect**: 66 **Average Score**: 26.67 %



Question 92 of 122

Question Difficulty: Easy

Mr. X is complaining of pain and swelling of his fingers that developed slowly over the past 6 months. He also reported scaly itching lesions on his forehands that started to show in the past month.

Examination shows telescoping deformity of both index fingers with deformed wrest and MCP joints. His nails show pitting and horizontal ridging.

What is the most likely diagnosis?

○ **Gouty arthritis**
○ **Reactive arthritis**
○ **Arthritis mutilans**
● **Rheumatoid arthritis**
○ **Systemic lupus erythematosus**

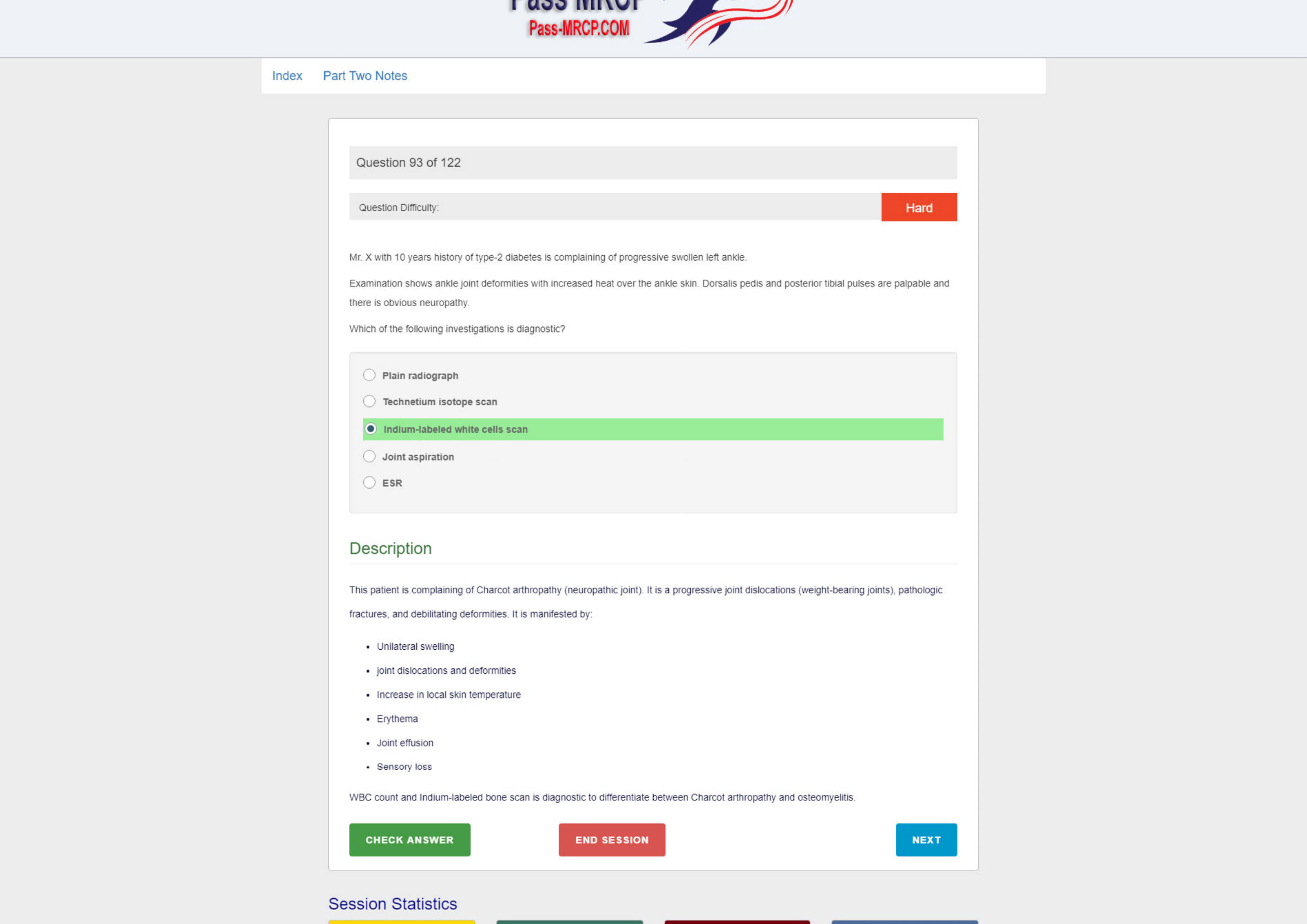
Description

This patient developed psoriatic arthritis. It develops in at least 5% of patients with psoriasis. It precedes the development of skin lesions in 60-80% of patients. Psoriatic arthritis types:

- Rheumatoid-like polyarthritis: (the most common type)
- Asymmetrical oligo-arthritis
- Sacroilitis
- DIP joint disease
- Arthritis mutilans (severe deformity fingers and hand {telescoping fingers}) as this case

Session Statistics

Answered: 91
✓ **Correct**: 24
✕ **Incorrect**: 67
Average Score: 26.37



Question 93 of 122

Question Difficulty: Hard

Mr. X with 10 years history of type-2 diabetes is complaining of progressive swollen left ankle.

Examination shows ankle joint deformities with increased heat over the ankle skin. Dorsalis pedis and posterior tibial pulses are palpable and there is obvious neuropathy.

Which of the following investigations is diagnostic?

○ **Plain radiograph**
○ **Technetium isotope scan**
● **Indium-labeled white cells scan**
○ **Joint aspiration**
○ **ESR**

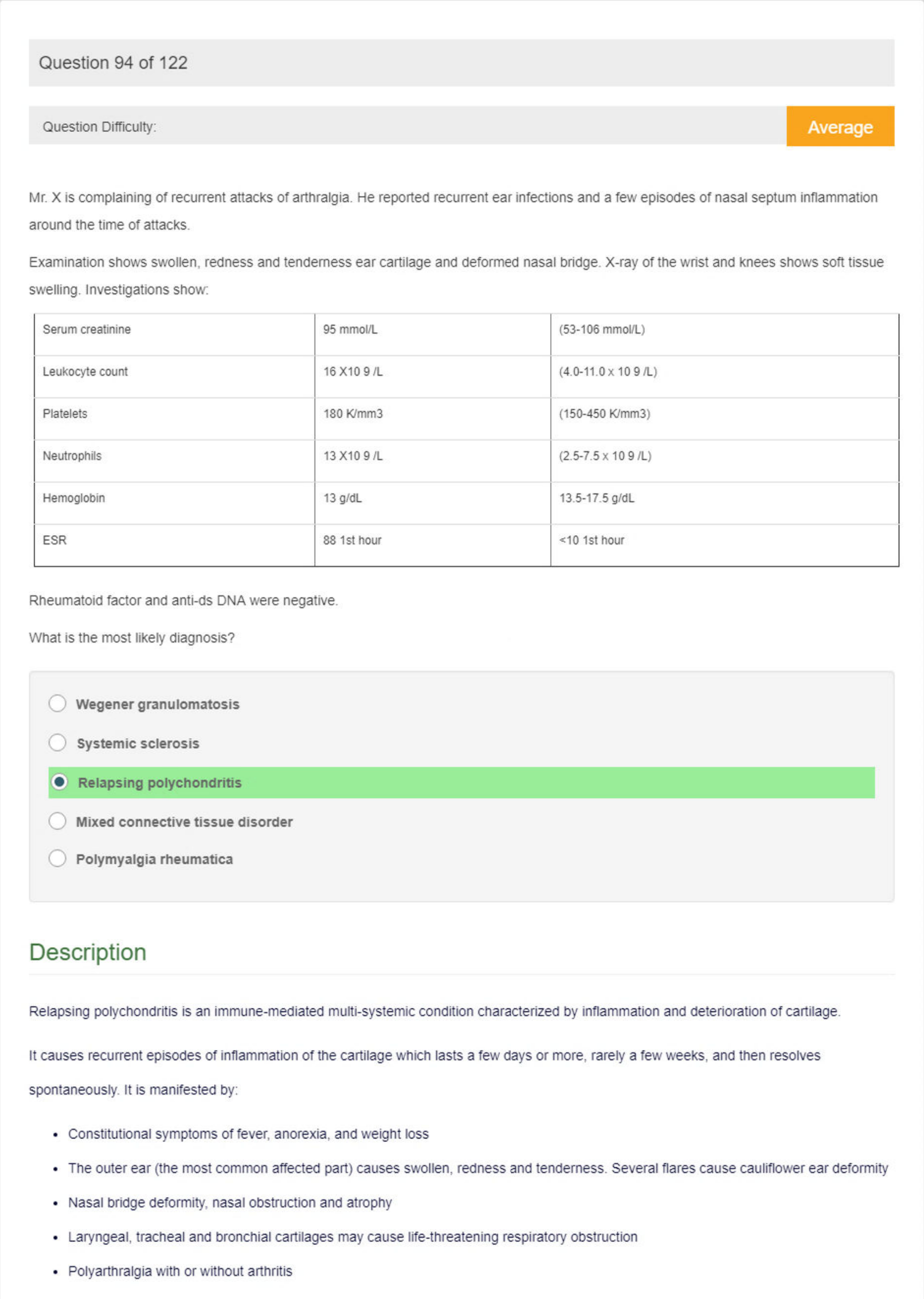
Description

This patient is complaining of Charcot arthropathy (neuropathic joint). It is a progressive joint dislocations (weight-bearing joints), pathologic fractures, and debilitating deformities. It is manifested by:

- Unilateral swelling
- joint dislocations and deformities
- Increase in local skin temperature
- Erythema
- Joint effusion
- Sensory loss

WBC count and Indium-labeled bone scan is diagnostic to differentiate between Charcot arthropathy and osteomyelitis.

Session Statistics



Mr. X is complaining of recurrent attacks of arthralgia. He reported recurrent ear infections and a few episodes of nasal septum inflammation around the time of attacks.

Examination shows swollen, redness and tenderness ear cartilage and deformed nasal bridge. X-ray of the wrist and knees shows soft tissue swelling. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	13 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	88 1st hour	<10 1st hour

Rheumatoid factor and anti-ds DNA were negative.

What is the most likely diagnosis?

- ○ **Wegener granulomatosis**
- ○ **Systemic sclerosis**
- ● **Relapsing polychondritis**
- ○ **Mixed connective tissue disorder**
- ○ **Polymyalgia rheumatica**

Description

Relapsing polychondritis is an immune-mediated multi-systemic condition characterized by inflammation and deterioration of cartilage.

It causes recurrent episodes of inflammation of the cartilage which lasts a few days or more, rarely a few weeks, and then resolves spontaneously. It is manifested by:

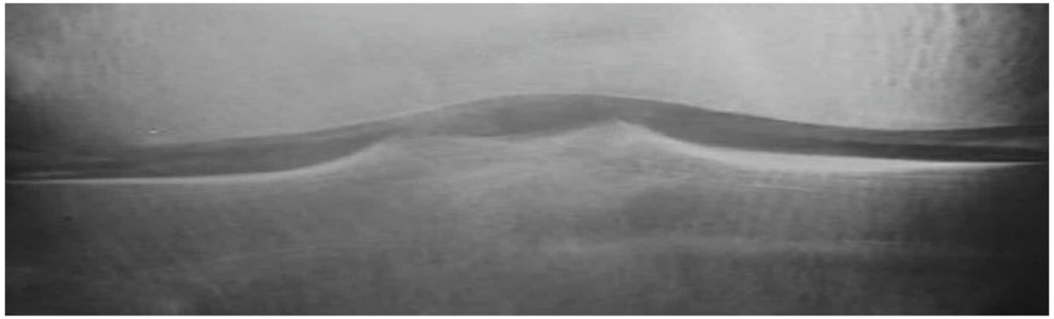
- Constitutional symptoms of fever, anorexia, and weight loss
- The outer ear (the most common affected part) causes swollen, redness and tenderness. Several flares cause cauliflower ear deformity
- Nasal bridge deformity, nasal obstruction and atrophy
- Laryngeal, tracheal and bronchial cartilages may cause life-threatening respiratory obstruction
- Polyarthralgia with or without arthritis

Question 95 of 122

Question Difficulty: **Easy**

Mr. X is complaining of arthritis affecting the elbow, and knee joints for 3 weeks days. There is no history of trauma. Examination shows swollen and red knees and elbows with moderate sized effusion.

Investigations show elevated ESR and negative RF and ANA. Joint aspiration shows small rhomboid-shaped crystals. Knee x-ray is shown in the image.



What is the most likely diagnosis?

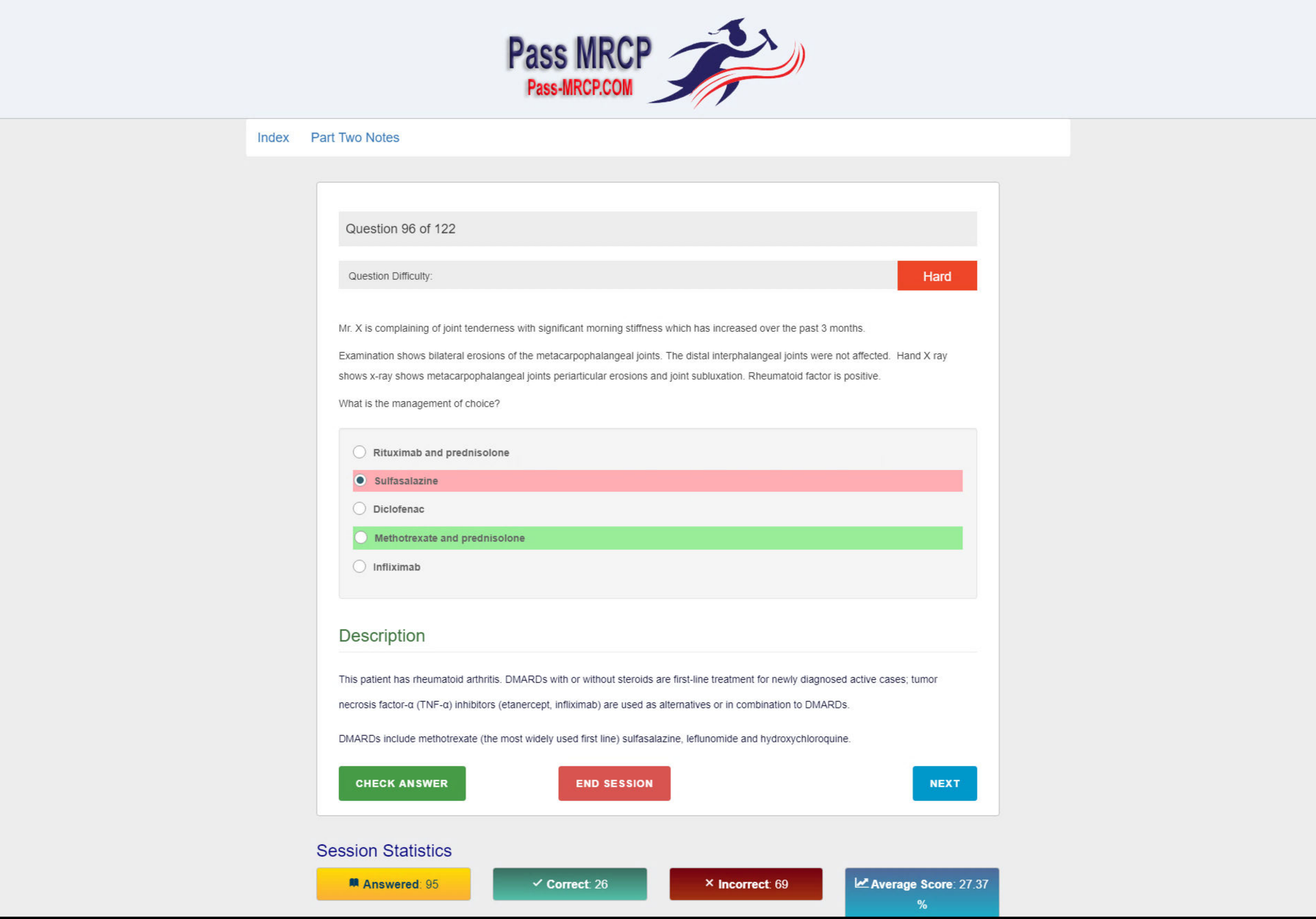
- ○ **Pseudogout**
- ○ **Osteoarthritis**
- ○ **Sarcoidosis**
- ● **Gout**
- ○ **Rheumatoid arthritis**

Description

Pseudogout (chondrocalcinosis) is caused by calcium pyrophosphate crystals deposition in joints. It can present as an acute or chronic inflammatory arthritis in the same way as gout. X-ray shows chondrocalcinosis.

CHECK ANSWER **END SESSION** **NEXT**

Session Statistics



Question 96 of 122

Question Difficulty: Hard

Mr. X is complaining of joint tenderness with significant morning stiffness which has increased over the past 3 months.

Examination shows bilateral erosions of the metacarpophalangeal joints. The distal interphalangeal joints were not affected. Hand X ray shows x-ray shows metacarpophalangeal joints periarticular erosions and joint subluxation. Rheumatoid factor is positive.

What is the management of choice?

- ○ Rituximab and prednisolone
- ● Sulfasalazine
- ○ Diclofenac
- ○ Methotrexate and prednisolone
- ○ Infliximab

Description

This patient has rheumatoid arthritis. DMARDs with or without steroids are first-line treatment for newly diagnosed active cases; tumor necrosis factor-α (TNF-α) inhibitors (etanercept, infliximab) are used as alternatives or in combination to DMARDs.

DMARDs include methotrexate (the most widely used first line) sulfasalazine, leflunomide and hydroxychloroquine.

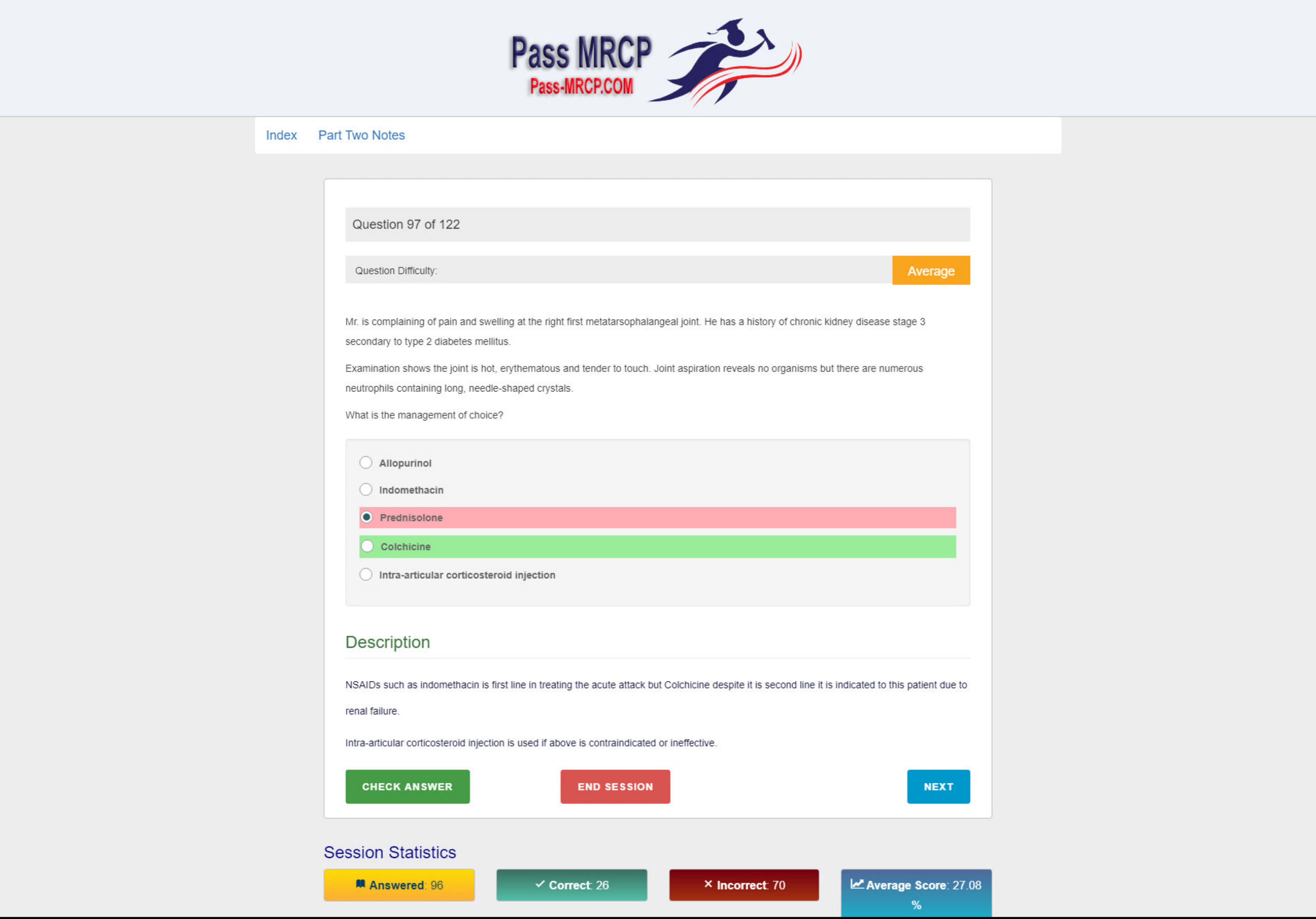
Session Statistics

Answered: 95

✓ Correct: 26

✕ Incorrect: 69

Average Score: 27.37 %



Question 97 of 122

Question Difficulty: Average

Mr. is complaining of pain and swelling at the right first metatarsophalangeal joint. He has a history of chronic kidney disease stage 3 secondary to type 2 diabetes mellitus.

Examination shows the joint is hot, erythematous and tender to touch. Joint aspiration reveals no organisms but there are numerous neutrophils containing long, needle-shaped crystals.

What is the management of choice?

○ **Allopurinol**
○ **Indomethacin**
● **Prednisolone**
○ **Colchicine**
○ **Intra-articular corticosteroid injection**

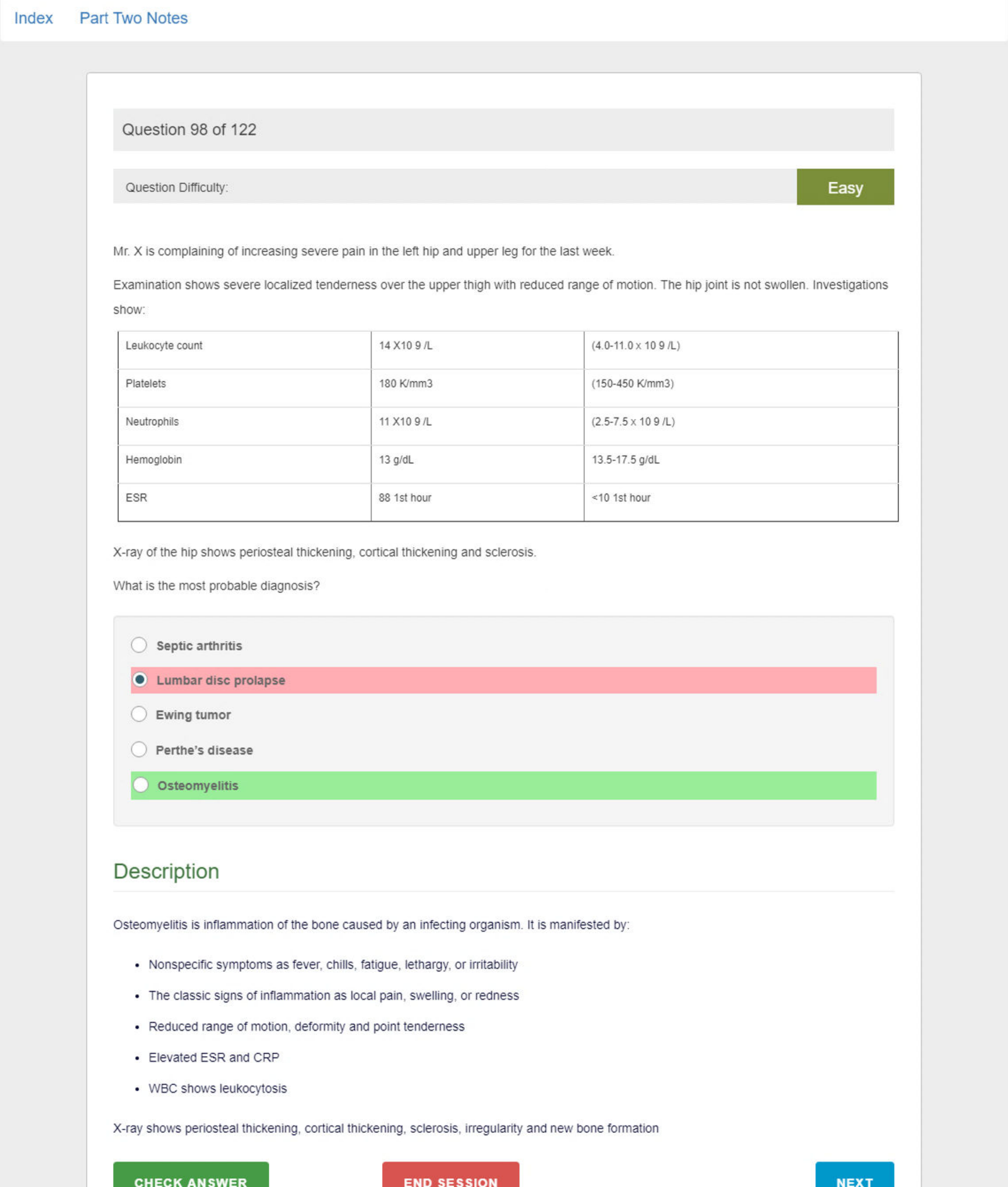
Description

NSAIDs such as indomethacin is first line in treating the acute attack but Colchicine despite it is second line it is indicated to this patient due to renal failure.

Intra-articular corticosteroid injection is used if above is contraindicated or ineffective.

Session Statistics

Answered: 96
✓ **Correct**: 26
✕ **Incorrect**: 70
Average Score: 27.08 %



Question 98 of 122

Question Difficulty: **Easy**

Mr. X is complaining of increasing severe pain in the left hip and upper leg for the last week.

Examination shows severe localized tenderness over the upper thigh with reduced range of motion. The hip joint is not swollen. Investigations show:

Leukocyte count	14 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	11 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	88 1st hour	<10 1st hour

X-ray of the hip shows periosteal thickening, cortical thickening and sclerosis.

What is the most probable diagnosis?

○ **Septic arthritis**

● **Lumbar disc prolapse**

○ **Ewing tumor**

○ **Perthe's disease**

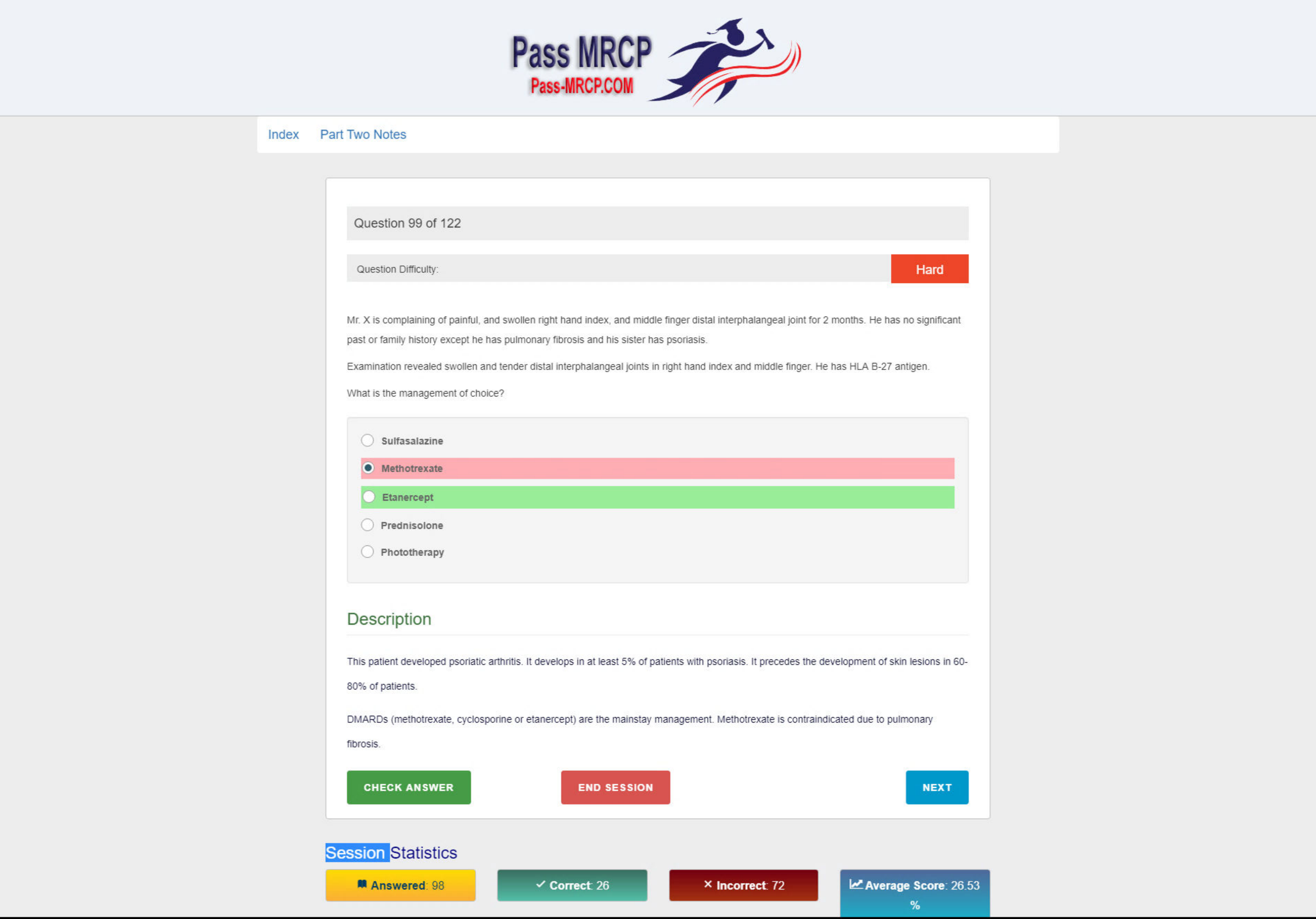
○ **Osteomyelitis**

Description

Osteomyelitis is inflammation of the bone caused by an infecting organism. It is manifested by:

- Nonspecific symptoms as fever, chills, fatigue, lethargy, or irritability
- The classic signs of inflammation as local pain, swelling, or redness
- Reduced range of motion, deformity and point tenderness
- Elevated ESR and CRP
- WBC shows leukocytosis

X-ray shows periosteal thickening, cortical thickening, sclerosis, irregularity and new bone formation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Question Difficulty: Hard

Mr. X is complaining of painful, and swollen right hand index, and middle finger distal interphalangeal joint for 2 months. He has no significant past or family history except he has pulmonary fibrosis and his sister has psoriasis.

Examination revealed swollen and tender distal interphalangeal joints in right hand index and middle finger. He has HLA B-27 antigen.

What is the management of choice?

- ○ **Sulfasalazine**
- ● **Methotrexate**
- ○ **Etanercept**
- ○ **Prednisolone**
- ○ **Phototherapy**

Description

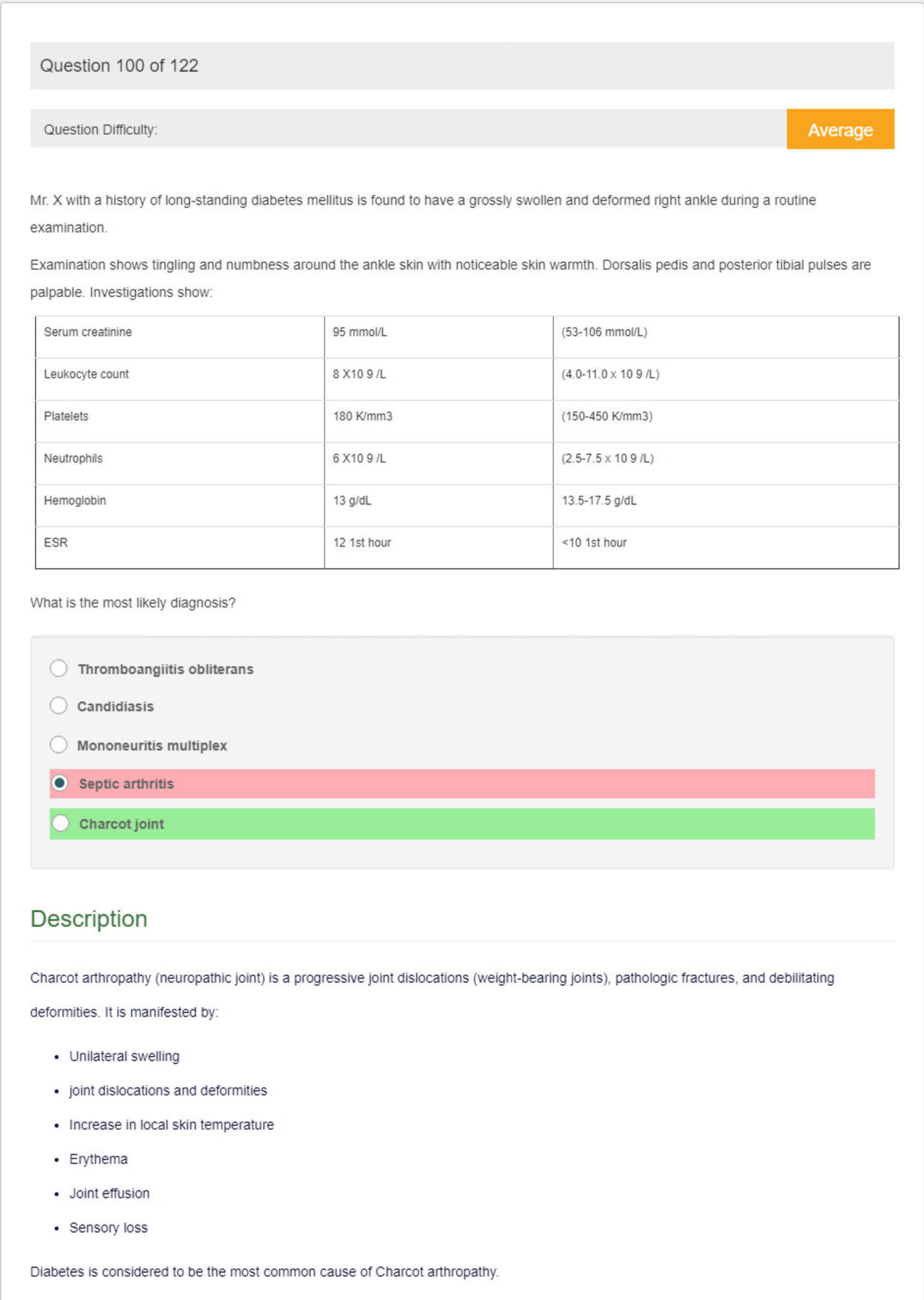
This patient developed psoriatic arthritis. It develops in at least 5% of patients with psoriasis. It precedes the development of skin lesions in 60-80% of patients.

DMARDs (methotrexate, cyclosporine or etanercept) are the mainstay management. Methotrexate is contraindicated due to pulmonary fibrosis.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 98
✓ Correct: 26
✕ Incorrect: 72
Average Score: 26.53 %



Question 100 of 122

Question Difficulty: Average

Mr. X with a history of long-standing diabetes mellitus is found to have a grossly swollen and deformed right ankle during a routine examination.

Examination shows tingling and numbness around the ankle skin with noticeable skin warmth. Dorsalis pedis and posterior tibial pulses are palpable. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	6 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	12 1st hour	<10 1st hour

What is the most likely diagnosis?

○ **Thromboangiitis obliterans**

○ **Candidiasis**

○ **Mononeuritis multiplex**

● **Septic arthritis**

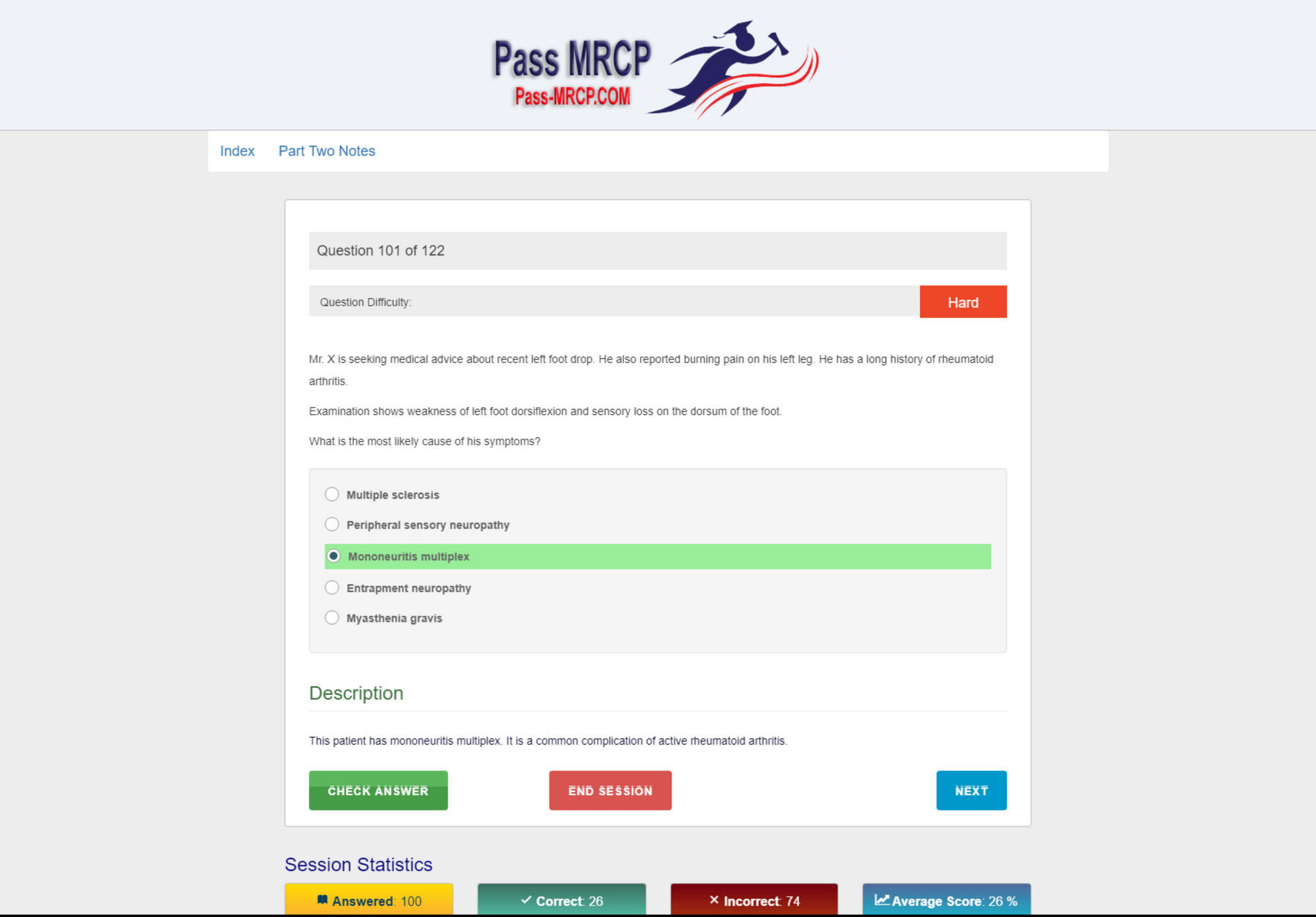
○ **Charcot joint**

Description

Charcot arthropathy (neuropathic joint) is a progressive joint dislocations (weight-bearing joints), pathologic fractures, and debilitating deformities. It is manifested by:

- Unilateral swelling
- joint dislocations and deformities
- Increase in local skin temperature
- Erythema
- Joint effusion
- Sensory loss

Diabetes is considered to be the most common cause of Charcot arthropathy.



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Question 101 of 122

Question Difficulty: Hard

Mr. X is seeking medical advice about recent left foot drop. He also reported burning pain on his left leg. He has a long history of rheumatoid arthritis.

Examination shows weakness of left foot dorsiflexion and sensory loss on the dorsum of the foot.

What is the most likely cause of his symptoms?

- ○ Multiple sclerosis
- ○ Peripheral sensory neuropathy
- ● Mononeuritis multiplex
- ○ Entrapment neuropathy
- ○ Myasthenia gravis

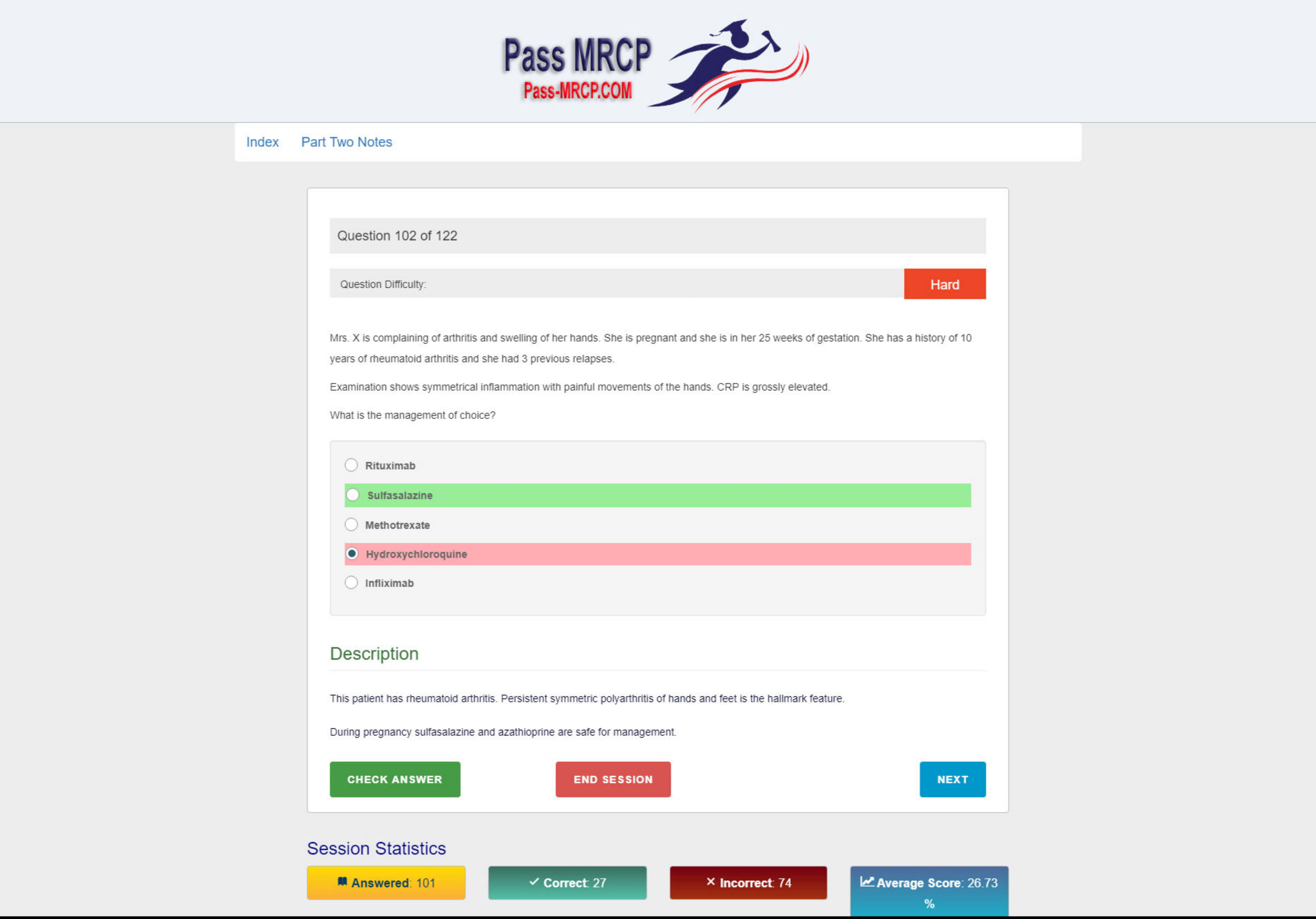
Description

This patient has mononeuritis multiplex. It is a common complication of active rheumatoid arthritis.

CHECK ANSWER
END SESSION
NEXT

Session Statistics

Answered: 100
✓ Correct: 26
✕ Incorrect: 74
Average Score: 26 %



Question 102 of 122

Question Difficulty: Hard

Mrs. X is complaining of arthritis and swelling of her hands. She is pregnant and she is in her 25 weeks of gestation. She has a history of 10 years of rheumatoid arthritis and she had 3 previous relapses.

Examination shows symmetrical inflammation with painful movements of the hands. CRP is grossly elevated.

What is the management of choice?

- ○ Rituximab
- ○ Sulfasalazine
- ○ Methotrexate
- ● Hydroxychloroquine
- ○ Infliximab

Description

This patient has rheumatoid arthritis. Persistent symmetric polyarthritis of hands and feet is the hallmark feature.

During pregnancy sulfasalazine and azathioprine are safe for management.

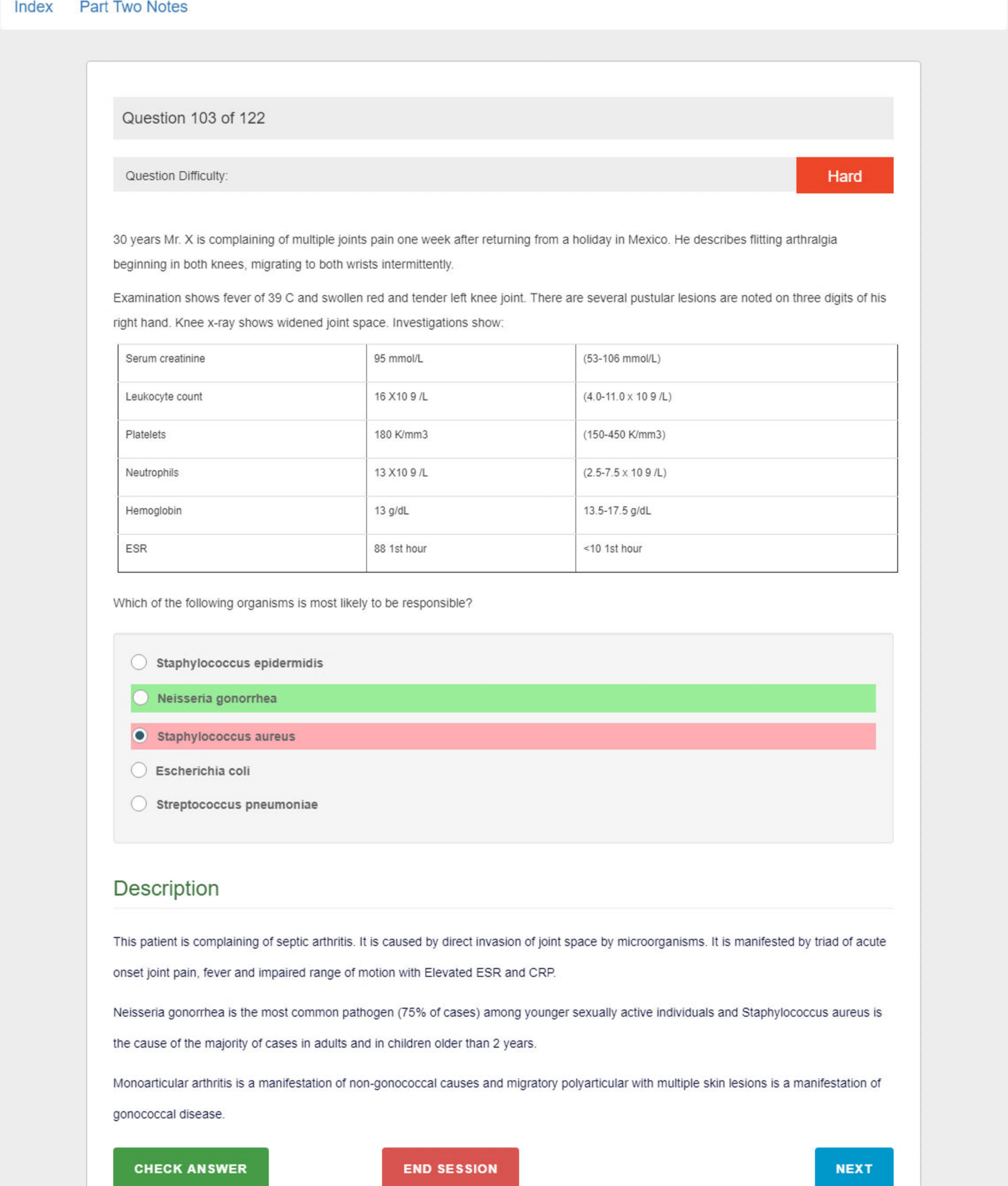
Session Statistics

Answered: 101

✓ Correct: 27

× Incorrect: 74

Average Score: 26.73 %



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Question Difficulty: **Hard**

30 years Mr. X is complaining of multiple joints pain one week after returning from a holiday in Mexico. He describes flitting arthralgia beginning in both knees, migrating to both wrists intermittently.

Examination shows fever of 39 C and swollen red and tender left knee joint. There are several pustular lesions are noted on three digits of his right hand. Knee x-ray shows widened joint space. Investigations show:

Serum creatinine	95 mmol/L	(53-106 mmol/L)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	180 K/mm3	(150-450 K/mm3)
Neutrophils	13 X10 9 /L	(2.5-7.5 x 10 9 /L)
Hemoglobin	13 g/dL	13.5-17.5 g/dL
ESR	88 1st hour	<10 1st hour

Which of the following organisms is most likely to be responsible?

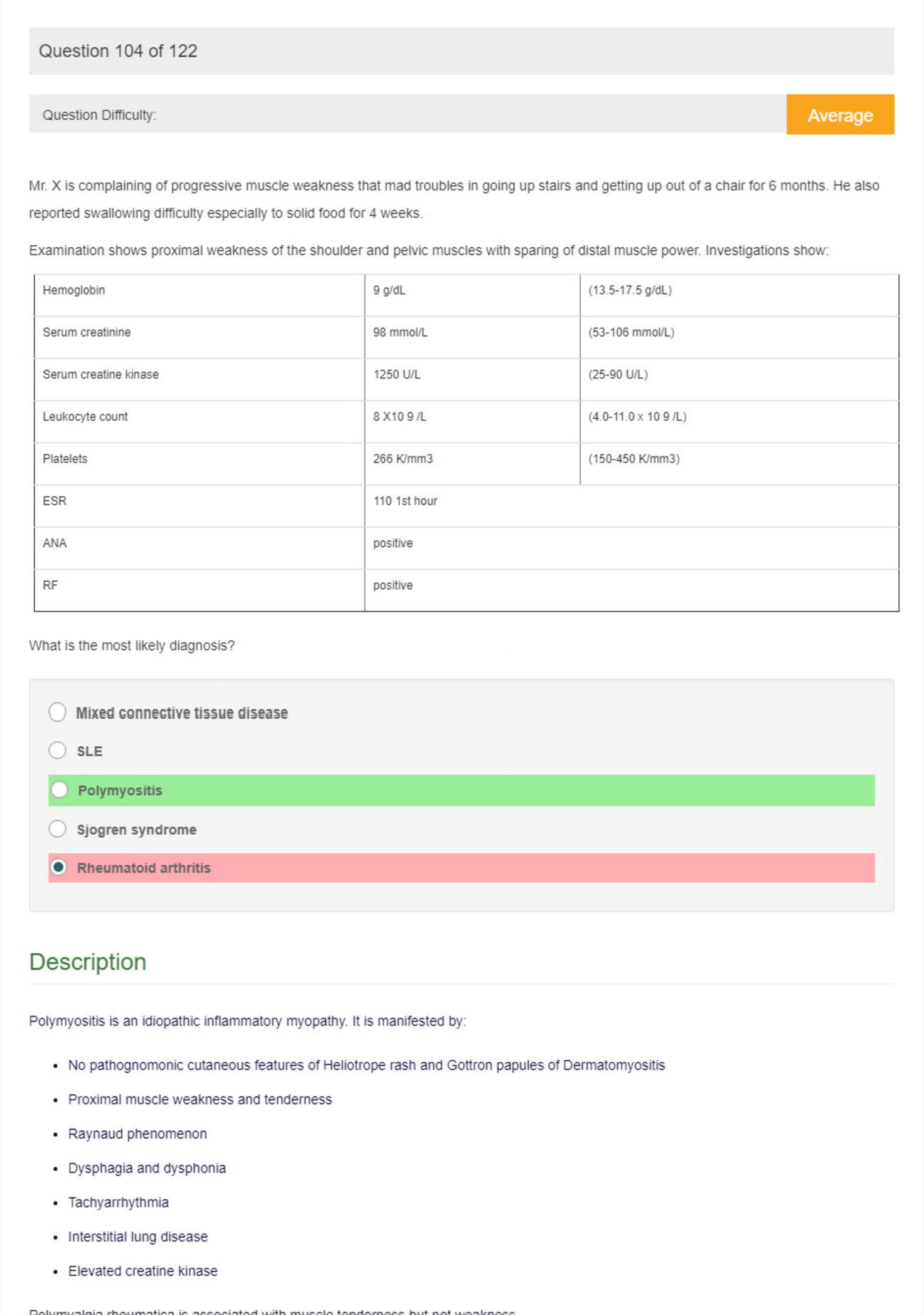
- ○ **Staphylococcus epidermidis**
- ○ **Neisseria gonorrhea**
- ● **Staphylococcus aureus**
- ○ **Escherichia coli**
- ○ **Streptococcus pneumoniae**

Description

This patient is complaining of septic arthritis. It is caused by direct invasion of joint space by microorganisms. It is manifested by triad of acute onset joint pain, fever and impaired range of motion with Elevated ESR and CRP.

Neisseria gonorrhea is the most common pathogen (75% of cases) among younger sexually active individuals and Staphylococcus aureus is the cause of the majority of cases in adults and in children older than 2 years.

Monoarticular arthritis is a manifestation of non-gonococcal causes and migratory polyarticular with multiple skin lesions is a manifestation of gonococcal disease.



Question 104 of 122

Question Difficulty: **Average**

Mr. X is complaining of progressive muscle weakness that mad troubles in going up stairs and getting up out of a chair for 6 months. He also reported swallowing difficulty especially to solid food for 4 weeks.

Examination shows proximal weakness of the shoulder and pelvic muscles with sparing of distal muscle power. Investigations show:

Hemoglobin	9 g/dL	(13.5-17.5 g/dL)
Serum creatinine	98 mmol/L	(53-106 mmol/L)
Serum creatine kinase	1250 U/L	(25-90 U/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	266 K/mm3	(150-450 K/mm3)
ESR	110 1st hour	
ANA	positive	
RF	positive	

What is the most likely diagnosis?

○ **Mixed connective tissue disease**

○ **SLE**

○ **Polymyositis** 🟩

○ **Sjogren syndrome**

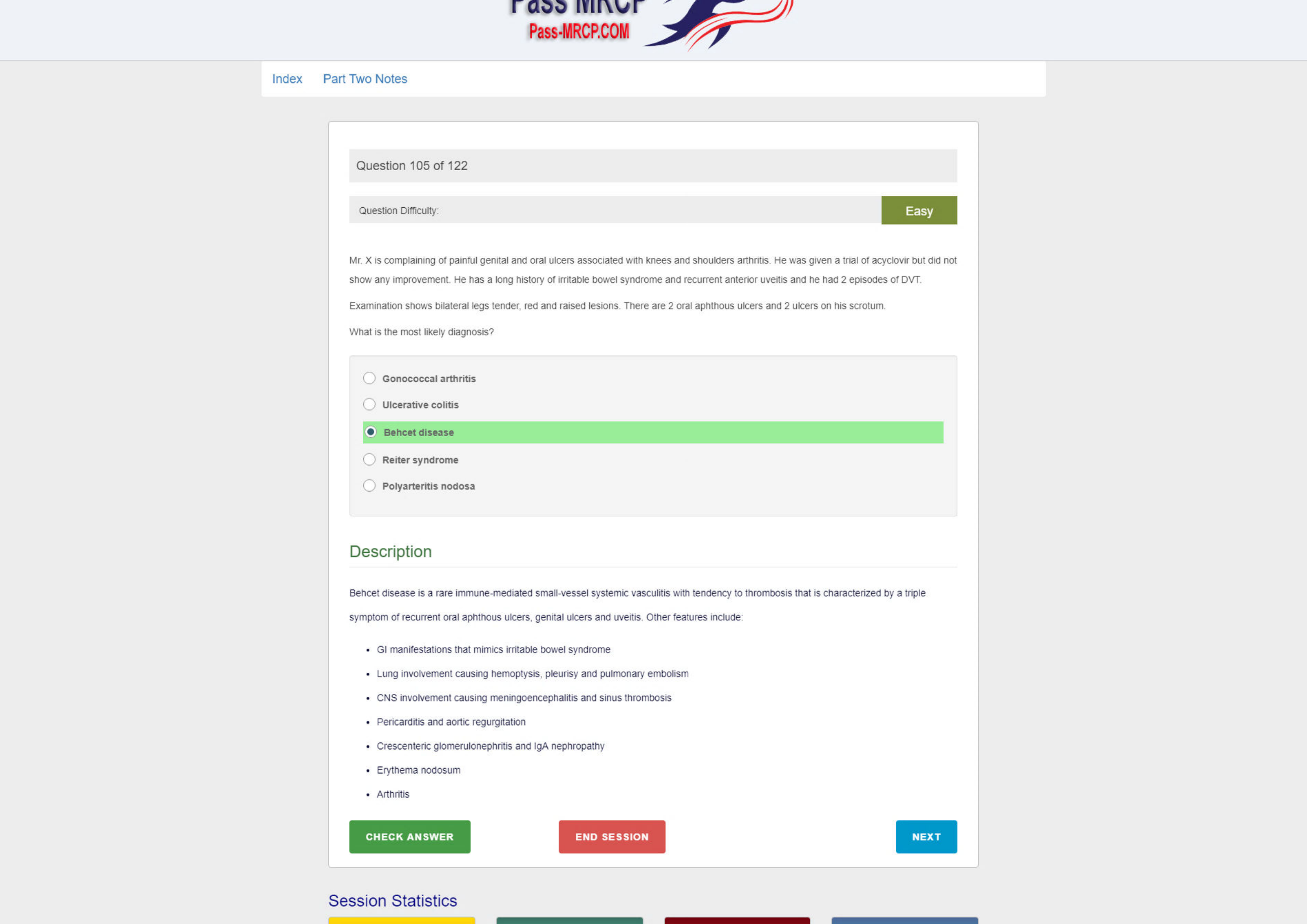
● **Rheumatoid arthritis** 🟥

Description

Polymyositis is an idiopathic inflammatory myopathy. It is manifested by:

- No pathognomonic cutaneous features of Heliotrope rash and Gottron papules of Dermatomyositis
- Proximal muscle weakness and tenderness
- Raynaud phenomenon
- Dysphagia and dysphonia
- Tachyarrhythmia
- Interstitial lung disease
- Elevated creatine kinase

Polymyalgia rheumatica is associated with muscle tenderness but not weakness



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Question Difficulty: Easy

Mr. X is complaining of painful genital and oral ulcers associated with knees and shoulders arthritis. He was given a trial of acyclovir but did not show any improvement. He has a long history of irritable bowel syndrome and recurrent anterior uveitis and he had 2 episodes of DVT.

Examination shows bilateral legs tender, red and raised lesions. There are 2 oral aphthous ulcers and 2 ulcers on his scrotum.

What is the most likely diagnosis?

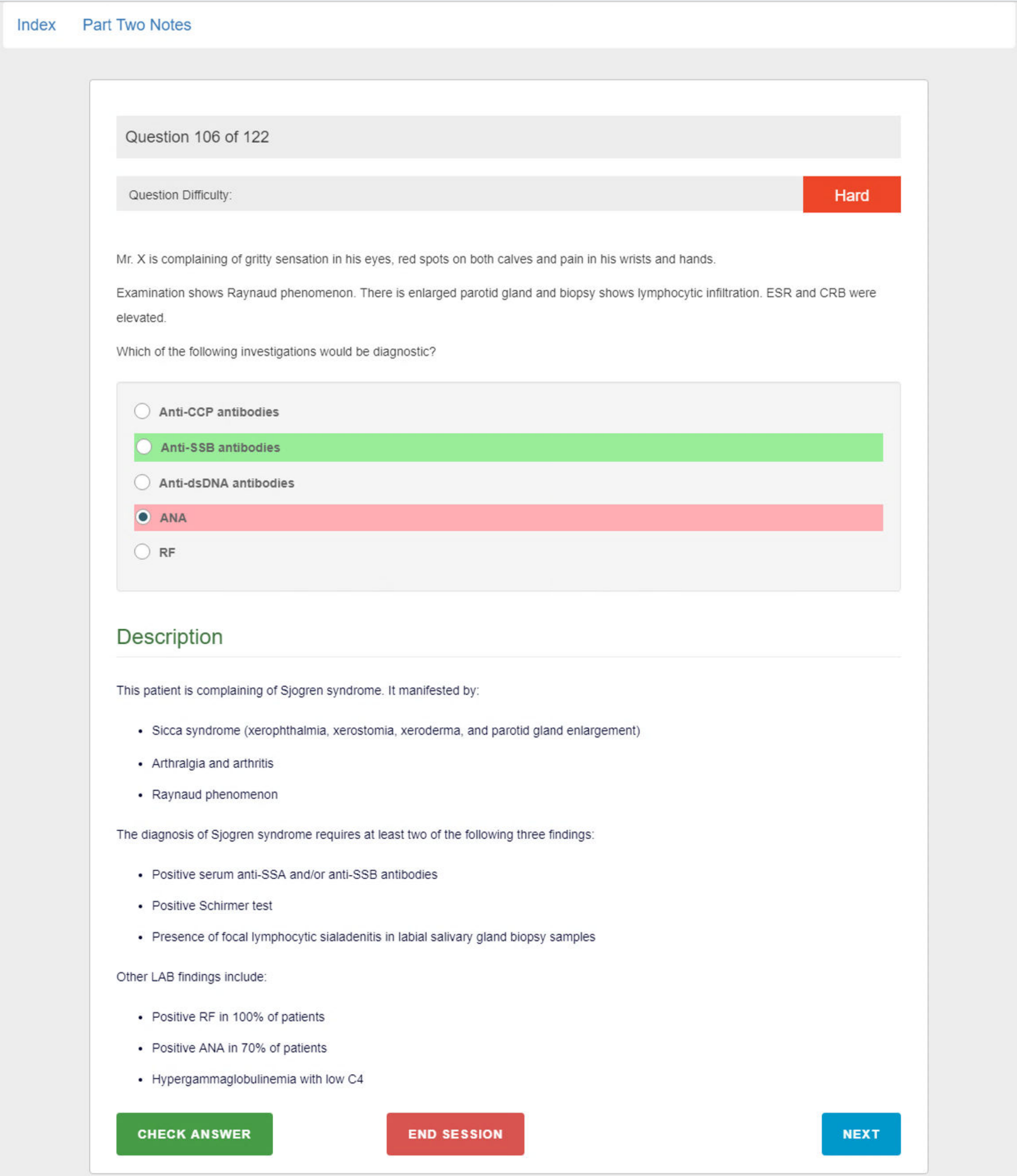
○ **Gonococcal arthritis**
○ **Ulcerative colitis**
● **Behcet disease**
○ **Reiter syndrome**
○ **Polyarteritis nodosa**

Description

Behcet disease is a rare immune-mediated small-vessel systemic vasculitis with tendency to thrombosis that is characterized by a triple symptom of recurrent oral aphthous ulcers, genital ulcers and uveitis. Other features include:

- GI manifestations that mimics irritable bowel syndrome
- Lung involvement causing hemoptysis, pleurisy and pulmonary embolism
- CNS involvement causing meningoencephalitis and sinus thrombosis
- Pericarditis and aortic regurgitation
- Crescenteric glomerulonephritis and IgA nephropathy
- Erythema nodosum
- Arthritis

Session Statistics



Question 106 of 122

Question Difficulty: Hard

Mr. X is complaining of gritty sensation in his eyes, red spots on both calves and pain in his wrists and hands.

Examination shows Raynaud phenomenon. There is enlarged parotid gland and biopsy shows lymphocytic infiltration. ESR and CRB were elevated.

Which of the following investigations would be diagnostic?

○ **Anti-CCP antibodies**
○ **Anti-SSB antibodies** 🟩
○ **Anti-dsDNA antibodies**
● **ANA** 🟥
○ **RF**

Description

This patient is complaining of Sjogren syndrome. It manifested by:

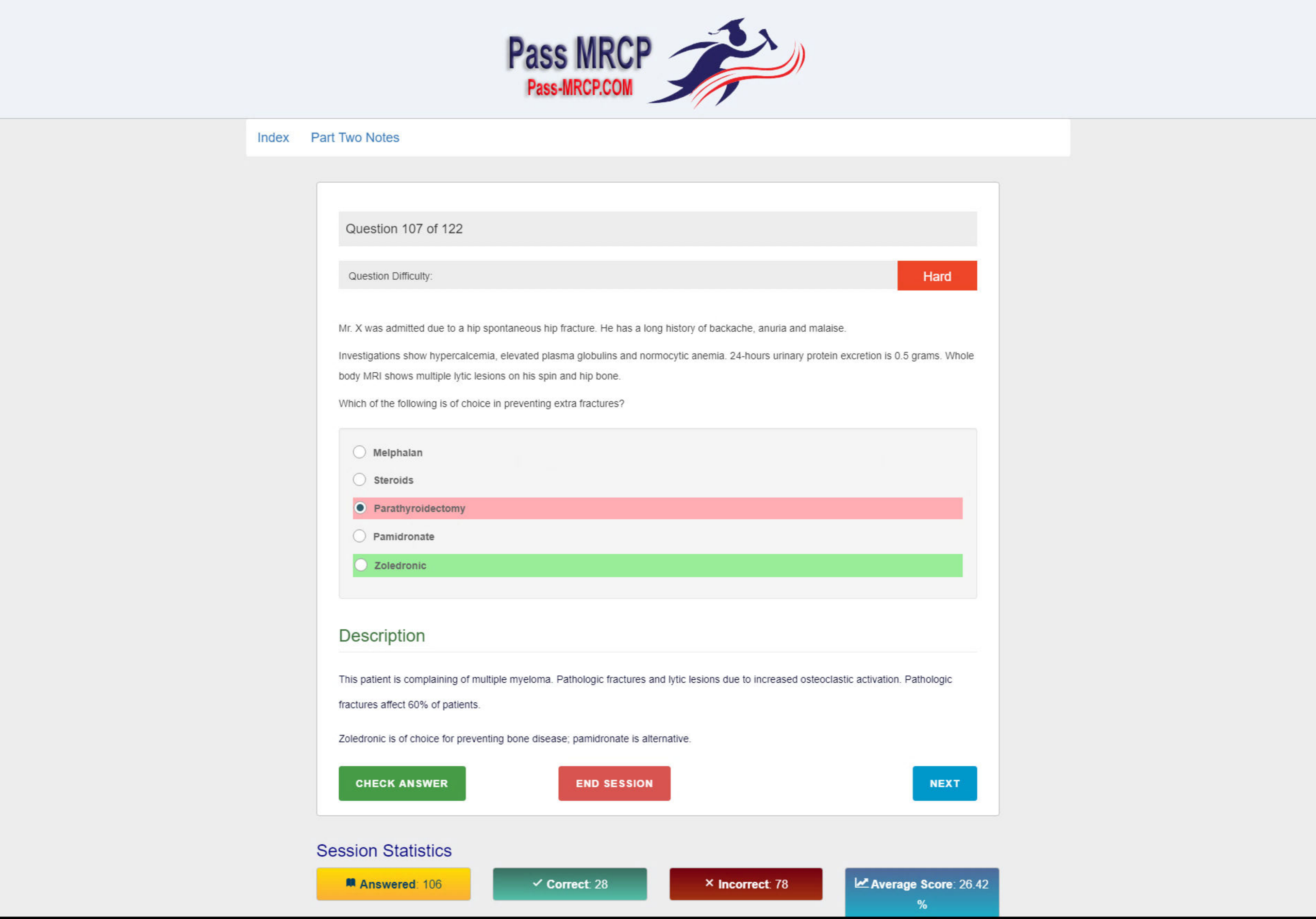
- Sicca syndrome (xerophthalmia, xerostomia, xeroderma, and parotid gland enlargement)
- Arthralgia and arthritis
- Raynaud phenomenon

The diagnosis of Sjogren syndrome requires at least two of the following three findings:

- Positive serum anti-SSA and/or anti-SSB antibodies
- Positive Schirmer test
- Presence of focal lymphocytic sialadenitis in labial salivary gland biopsy samples

Other LAB findings include:

- Positive RF in 100% of patients
- Positive ANA in 70% of patients
- Hypergammaglobulinemia with low C4



Question 107 of 122

Question Difficulty: Hard

Mr. X was admitted due to a hip spontaneous hip fracture. He has a long history of backache, anuria and malaise.

Investigations show hypercalcemia, elevated plasma globulins and normocytic anemia. 24-hours urinary protein excretion is 0.5 grams. Whole body MRI shows multiple lytic lesions on his spin and hip bone.

Which of the following is of choice in preventing extra fractures?

- ○ Melphalan
- ○ Steroids
- ● Parathyroidectomy
- ○ Pamidronate
- ○ Zoledronic

Description

This patient is complaining of multiple myeloma. Pathologic fractures and lytic lesions due to increased osteoclastic activation. Pathologic fractures affect 60% of patients.

Zoledronic is of choice for preventing bone disease; pamidronate is alternative.

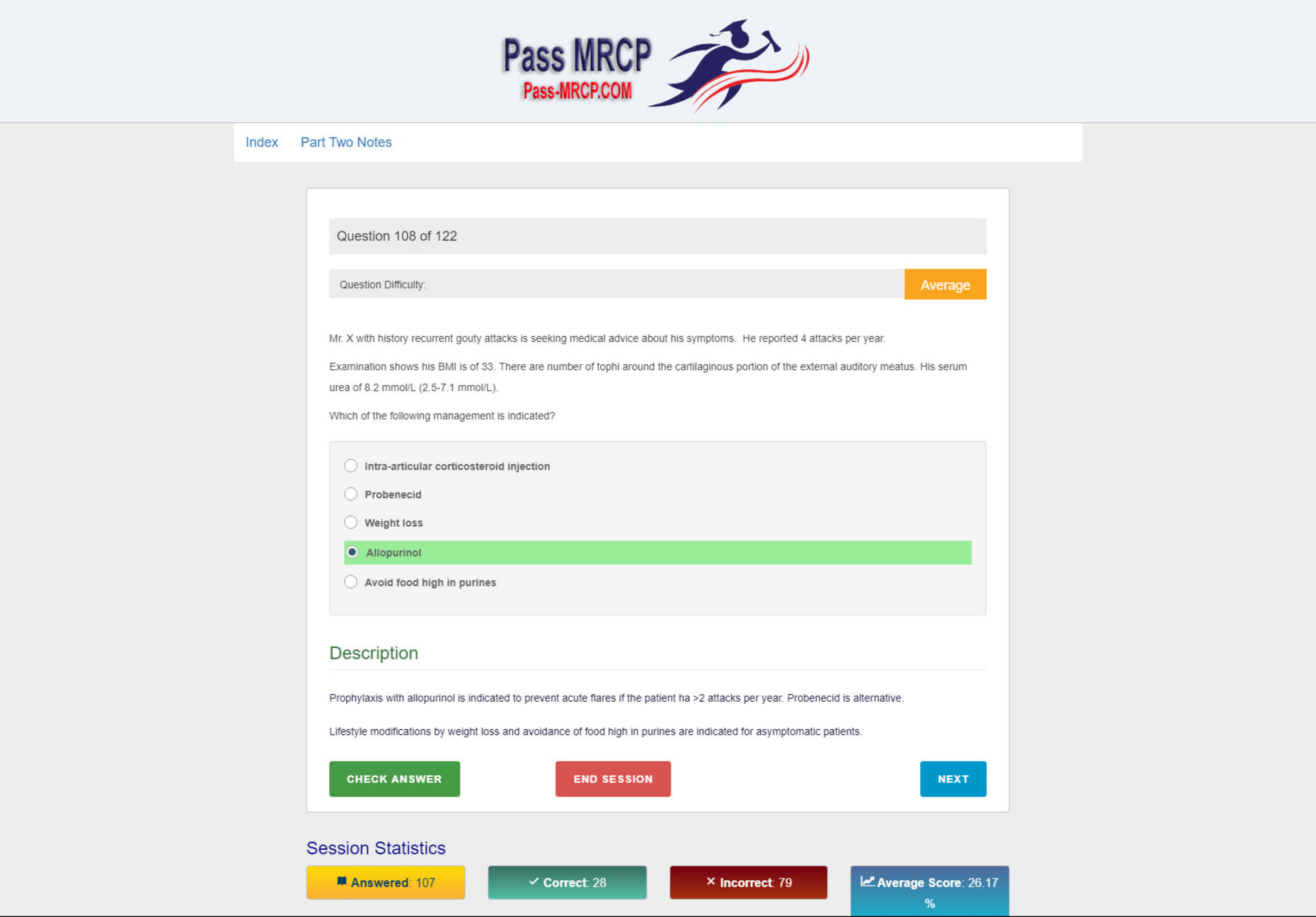
Session Statistics

Answered: 106

✓ Correct: 28

✕ Incorrect: 78

Average Score: 26.42 %



Question 108 of 122

Question Difficulty: Average

Mr. X with history recurrent gouty attacks is seeking medical advice about his symptoms. He reported 4 attacks per year.

Examination shows his BMI is of 33. There are number of tophi around the cartilaginous portion of the external auditory meatus. His serum urea of 8.2 mmol/L (2.5-7.1 mmol/L).

Which of the following management is indicated?

- ○ **Intra-articular corticosteroid injection**
- ○ **Probenecid**
- ○ **Weight loss**
- ● **Allopurinol**
- ○ **Avoid food high in purines**

Description

Prophylaxis with allopurinol is indicated to prevent acute flares if the patient ha >2 attacks per year. Probenecid is alternative.

Lifestyle modifications by weight loss and avoidance of food high in purines are indicated for asymptomatic patients.

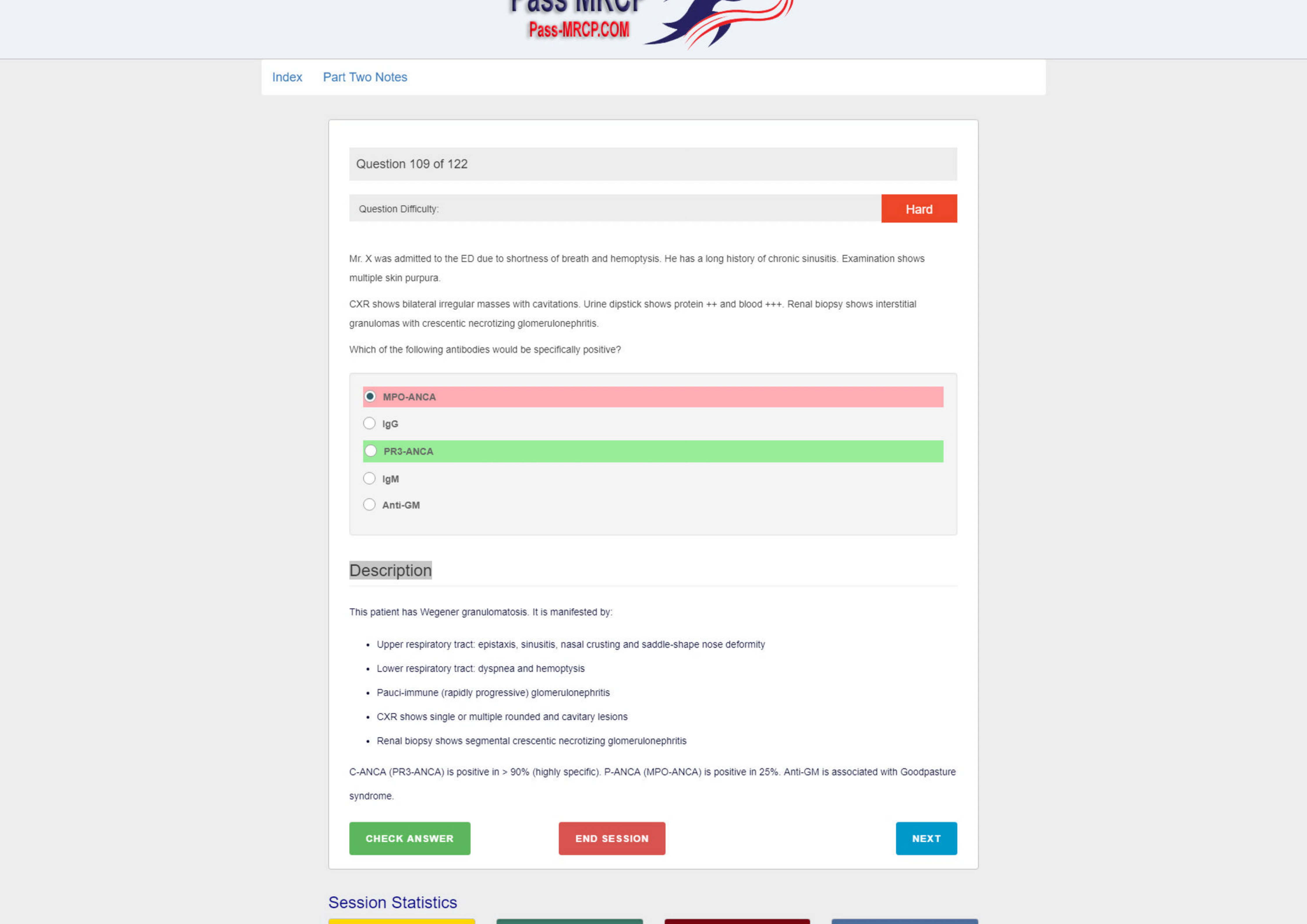
Session Statistics

Answered: 107

✓ **Correct**: 28

× **Incorrect**: 79

Average Score: 26.17 %



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Question Difficulty: **Hard**

Mr. X was admitted to the ED due to shortness of breath and hemoptysis. He has a long history of chronic sinusitis. Examination shows multiple skin purpura.

CXR shows bilateral irregular masses with cavitations. Urine dipstick shows protein ++ and blood +++. Renal biopsy shows interstitial granulomas with crescentic necrotizing glomerulonephritis.

Which of the following antibodies would be specifically positive?

● MPO-ANCA
○ IgG
○ PR3-ANCA
○ IgM
○ Anti-GM

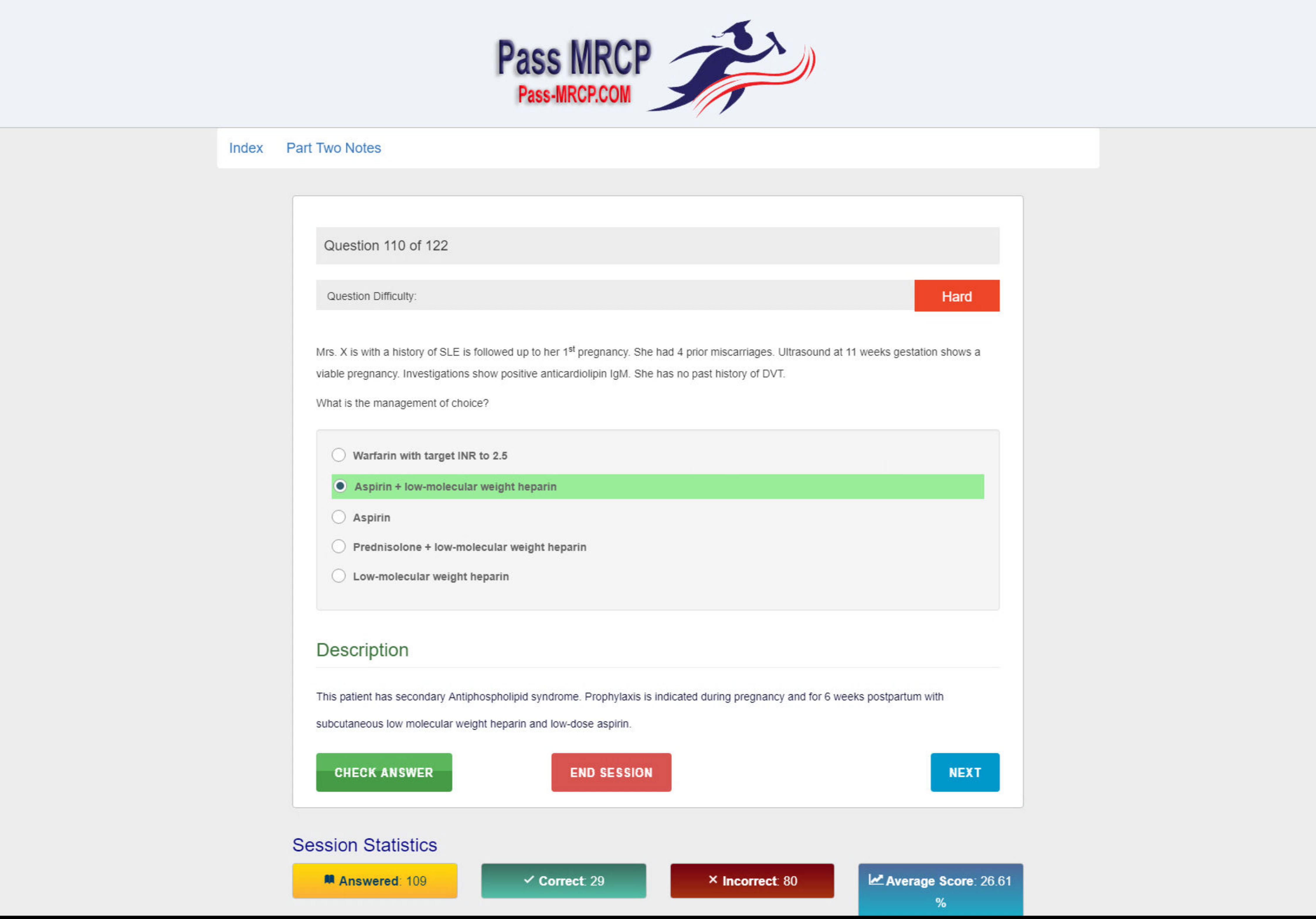
Description

This patient has Wegener granulomatosis. It is manifested by:

- Upper respiratory tract: epistaxis, sinusitis, nasal crusting and saddle-shape nose deformity
- Lower respiratory tract: dyspnea and hemoptysis
- Pauci-immune (rapidly progressive) glomerulonephritis
- CXR shows single or multiple rounded and cavitary lesions
- Renal biopsy shows segmental crescentic necrotizing glomerulonephritis

C-ANCA (PR3-ANCA) is positive in > 90% (highly specific). P-ANCA (MPO-ANCA) is positive in 25%. Anti-GM is associated with Goodpasture syndrome.

Session Statistics



Question 110 of 122

Question Difficulty: **Hard**

Mrs. X is with a history of SLE is followed up to her 1st pregnancy. She had 4 prior miscarriages. Ultrasound at 11 weeks gestation shows a viable pregnancy. Investigations show positive anticardiolipin IgM. She has no past history of DVT.

What is the management of choice?

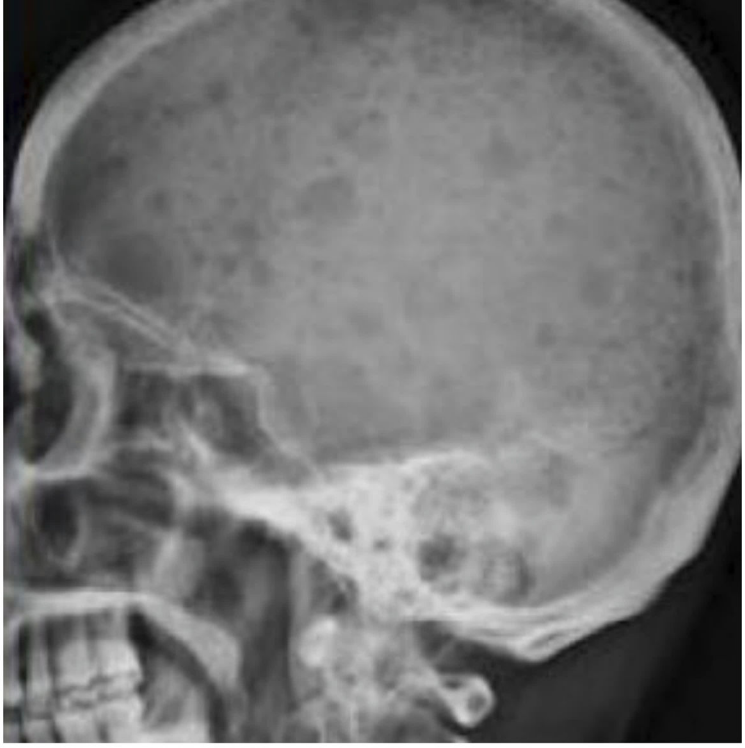
- ○ **Warfarin with target INR to 2.5**
- ● **Aspirin + low-molecular weight heparin**
- ○ **Aspirin**
- ○ **Prednisolone + low-molecular weight heparin**
- ○ **Low-molecular weight heparin**

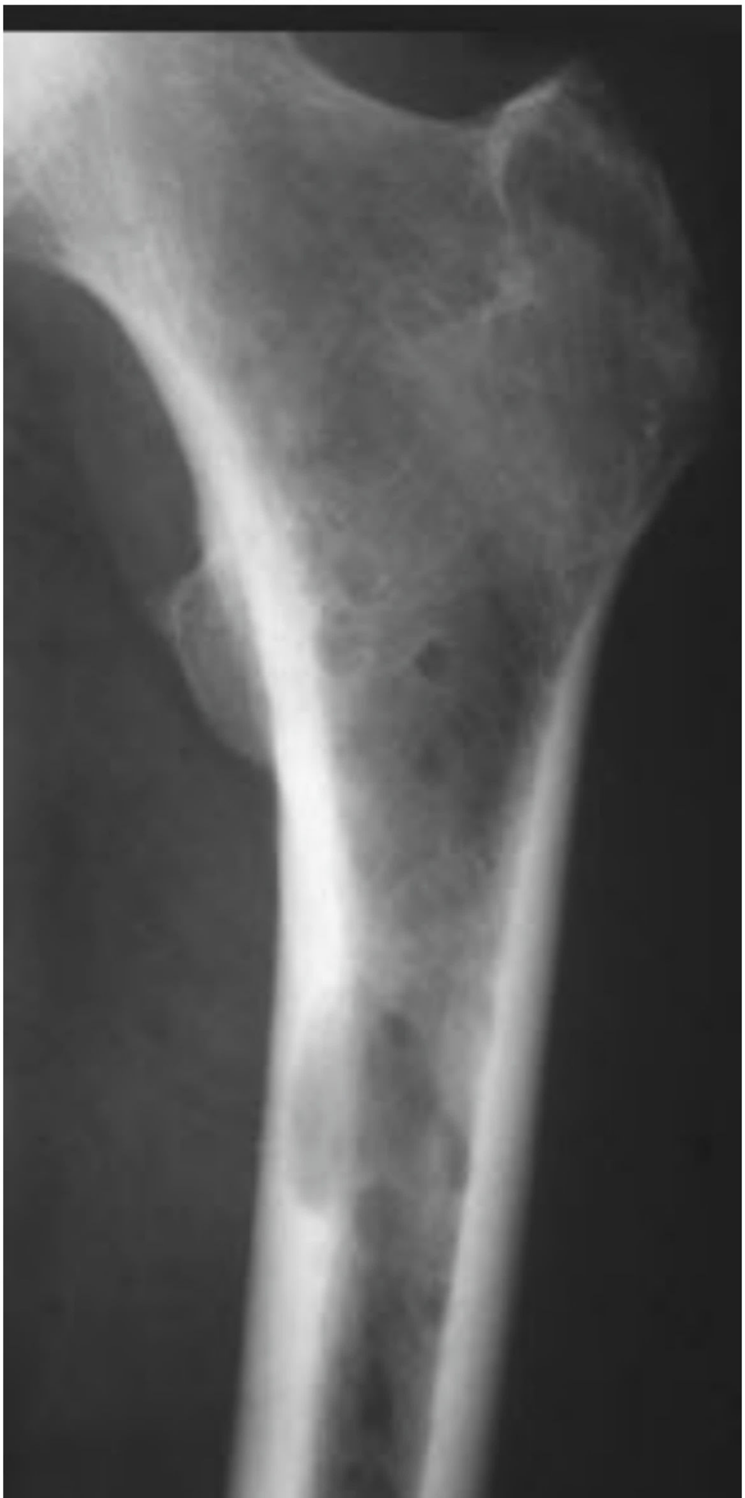
Description

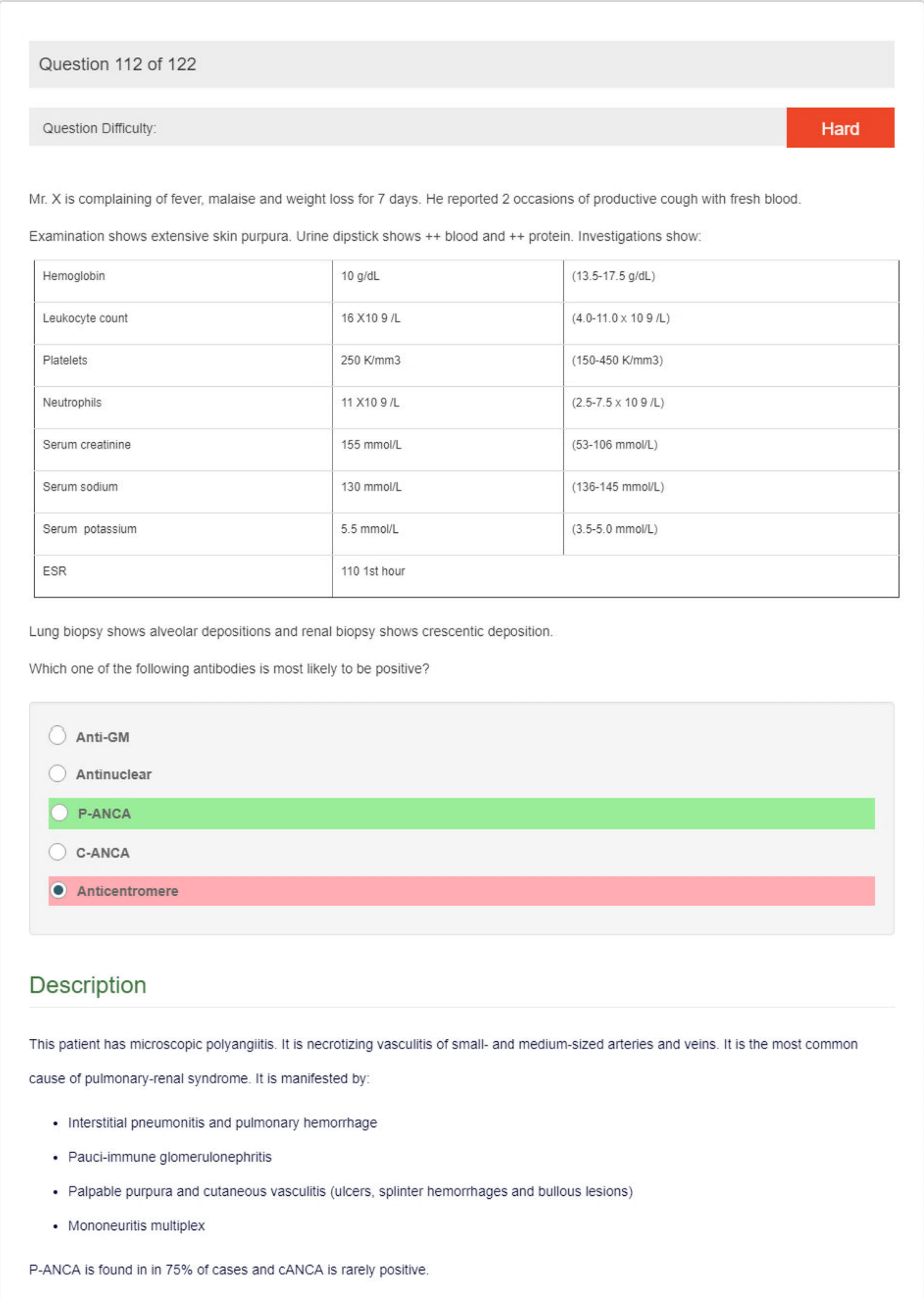
This patient has secondary Antiphospholipid syndrome. Prophylaxis is indicated during pregnancy and for 6 weeks postpartum with subcutaneous low molecular weight heparin and low-dose aspirin.

Session Statistics

Answered: 109
✓ **Correct**: 29
✕ **Incorrect**: 80
Average Score: 26.61 %







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Question Difficulty: **Hard**

Mr. X is complaining of fever, malaise and weight loss for 7 days. He reported 2 occasions of productive cough with fresh blood.

Examination shows extensive skin purpura. Urine dipstick shows ++ blood and ++ protein. Investigations show:

Hemoglobin	10 g/dL	(13.5-17.5 g/dL)
Leukocyte count	16 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	250 K/mm3	(150-450 K/mm3)
Neutrophils	11 X10 9 /L	(2.5-7.5 x 10 9 /L)
Serum creatinine	155 mmol/L	(53-106 mmol/L)
Serum sodium	130 mmol/L	(136-145 mmol/L)
Serum potassium	5.5 mmol/L	(3.5-5.0 mmol/L)
ESR	110 1st hour	

Lung biopsy shows alveolar depositions and renal biopsy shows crescentic deposition.

Which one of the following antibodies is most likely to be positive?

○ **Anti-GM**

○ **Antinuclear**

○ **P-ANCA**

○ **C-ANCA**

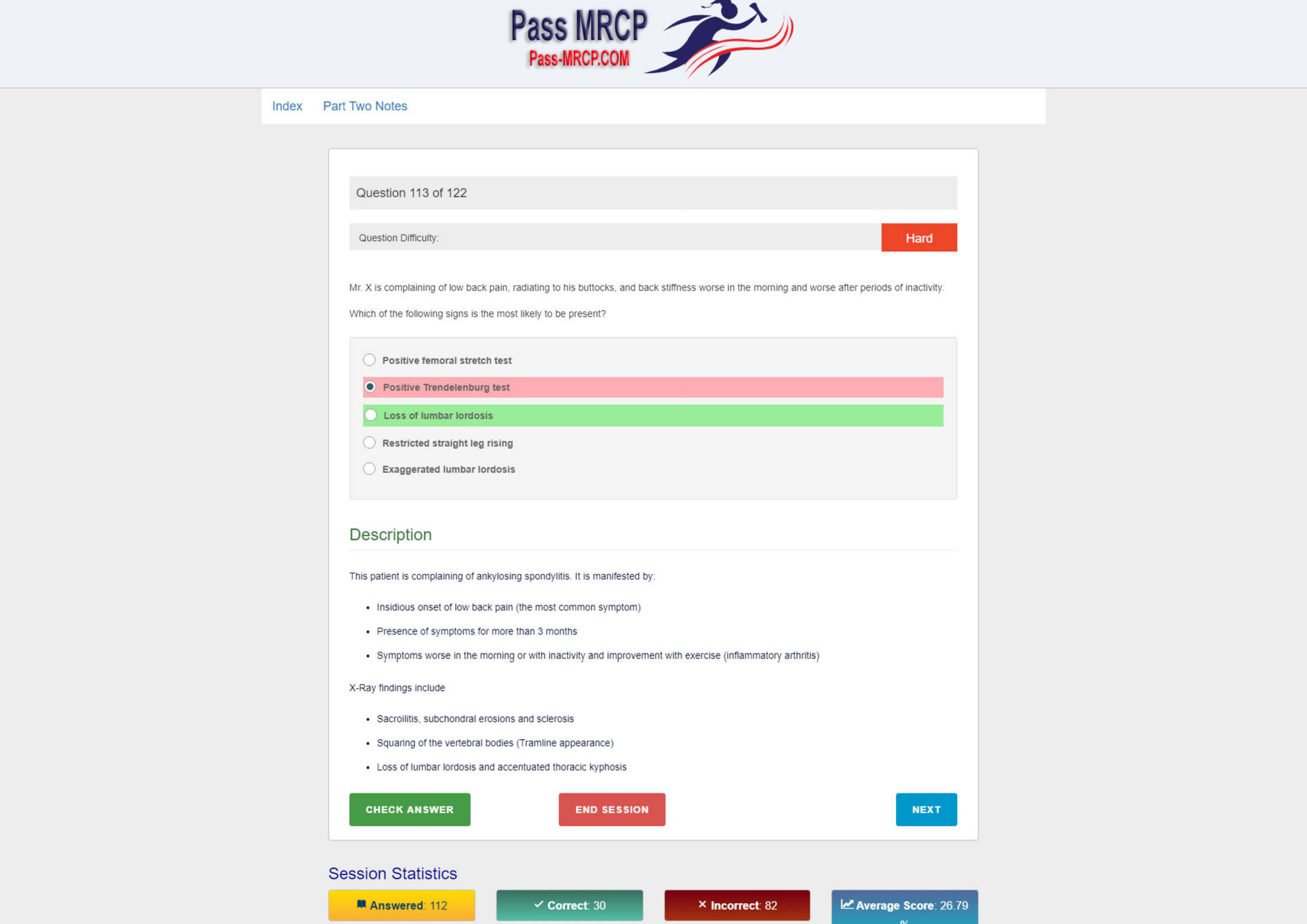
● **Anticentromere**

Description

This patient has microscopic polyangiitis. It is necrotizing vasculitis of small- and medium-sized arteries and veins. It is the most common cause of pulmonary-renal syndrome. It is manifested by:

- Interstitial pneumonitis and pulmonary hemorrhage
- Pauci-immune glomerulonephritis
- Palpable purpura and cutaneous vasculitis (ulcers, splinter hemorrhages and bullous lesions)
- Mononeuritis multiplex

P-ANCA is found in in 75% of cases and cANCA is rarely positive.



Question 113 of 122

Question Difficulty: **Hard**

Mr. X is complaining of low back pain, radiating to his buttocks, and back stiffness worse in the morning and worse after periods of inactivity.

Which of the following signs is the most likely to be present?

- ○ **Positive femoral stretch test**
- ● **Positive Trendelenburg test**
- ○ **Loss of lumbar lordosis**
- ○ **Restricted straight leg rising**
- ○ **Exaggerated lumbar lordosis**

Description

This patient is complaining of ankylosing spondylitis. It is manifested by:

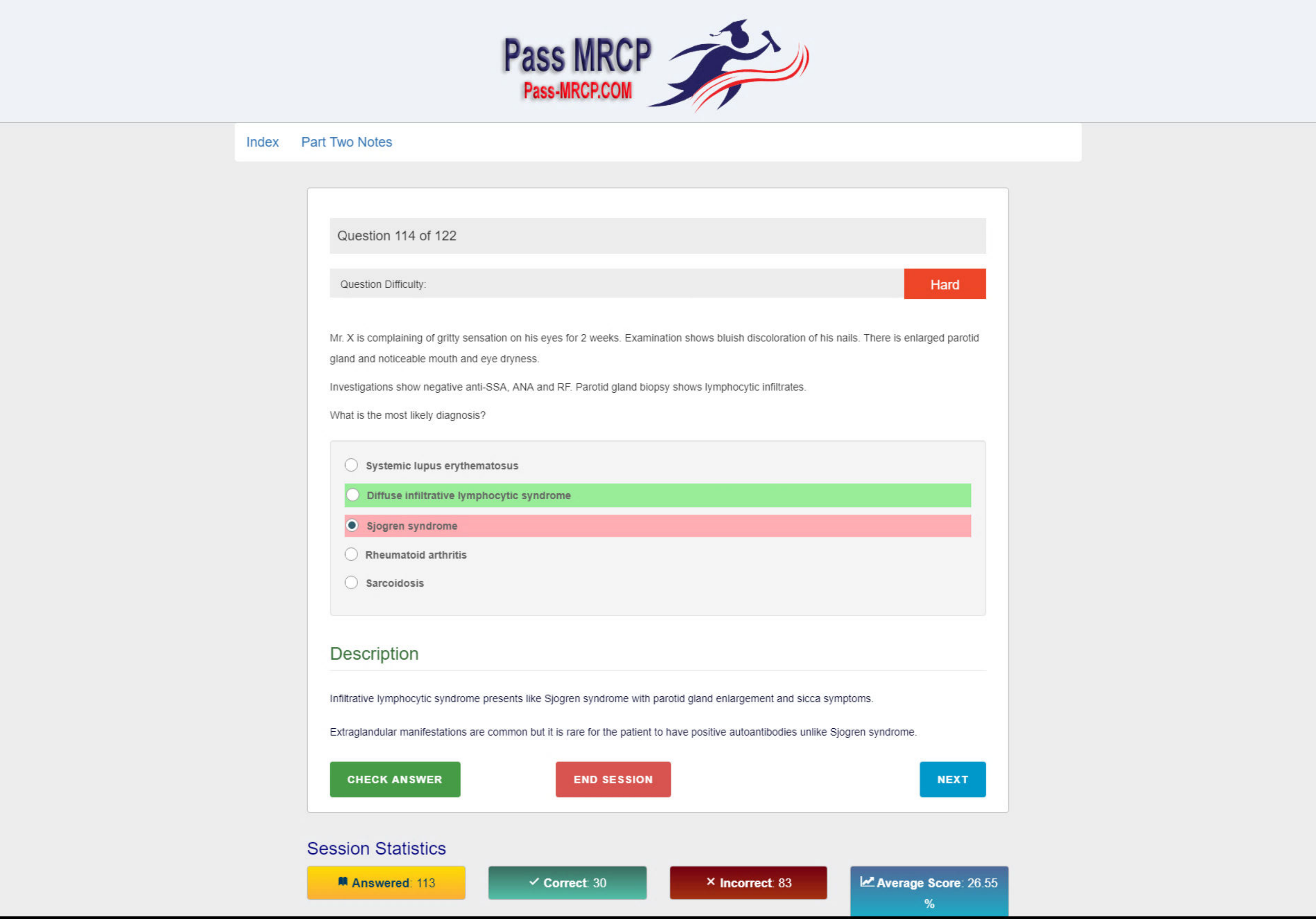
- Insidious onset of low back pain (the most common symptom)
- Presence of symptoms for more than 3 months
- Symptoms worse in the morning or with inactivity and improvement with exercise (inflammatory arthritis)

X-Ray findings include

- Sacroilitis, subchondral erosions and sclerosis
- Squaring of the vertebral bodies (Tramline appearance)
- Loss of lumbar lordosis and accentuated thoracic kyphosis

Session Statistics

Answered: 112
Correct: 30
Incorrect: 82
Average Score: 26.79



Question 114 of 122

Question Difficulty: Hard

Mr. X is complaining of gritty sensation on his eyes for 2 weeks. Examination shows bluish discoloration of his nails. There is enlarged parotid gland and noticeable mouth and eye dryness.

Investigations show negative anti-SSA, ANA and RF. Parotid gland biopsy shows lymphocytic infiltrates.

What is the most likely diagnosis?

- ○ Systemic lupus erythematosus
- ○ Diffuse infiltrative lymphocytic syndrome
- ● Sjogren syndrome
- ○ Rheumatoid arthritis
- ○ Sarcoidosis

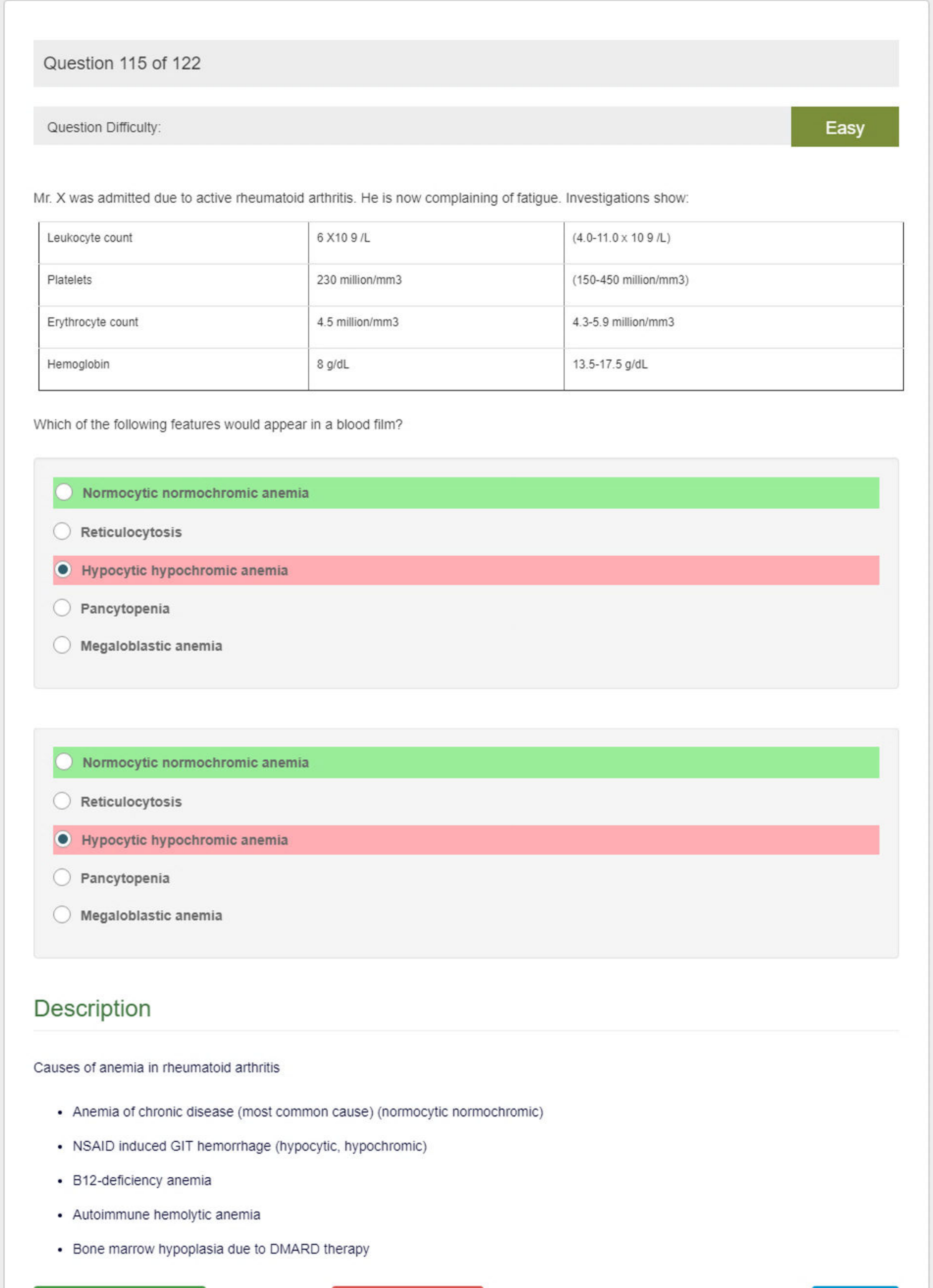
Description

Infiltrative lymphocytic syndrome presents like Sjogren syndrome with parotid gland enlargement and sicca symptoms.

Extraglandular manifestations are common but it is rare for the patient to have positive autoantibodies unlike Sjogren syndrome.

Session Statistics

- Answered: 113
- ✓ Correct: 30
- ✕ Incorrect: 83
- Average Score: 26.55 %



Question 115 of 122

Question Difficulty:

Mr. X was admitted due to active rheumatoid arthritis. He is now complaining of fatigue. Investigations show:

Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	230 million/mm3	(150-450 million/mm3)
Erythrocyte count	4.5 million/mm3	4.3-5.9 million/mm3
Hemoglobin	8 g/dL	13.5-17.5 g/dL

Which of the following features would appear in a blood film?

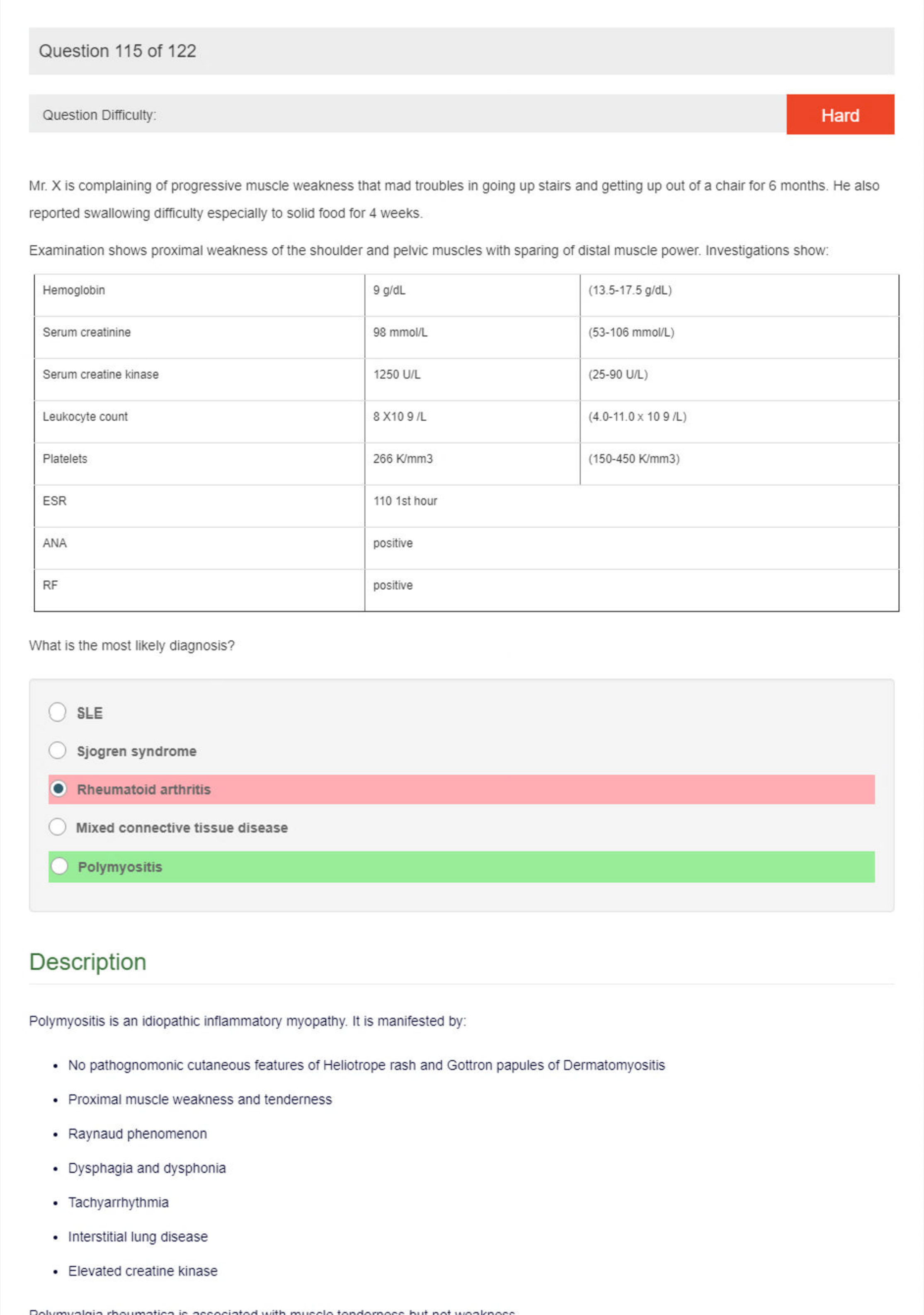
○ **Normocytic normochromic anemia**
○ **Reticulocytosis**
● **Hypocytic hypochromic anemia**
○ **Pancytopenia**
○ **Megaloblastic anemia**

○ **Normocytic normochromic anemia**
○ **Reticulocytosis**
● **Hypocytic hypochromic anemia**
○ **Pancytopenia**
○ **Megaloblastic anemia**

Description

Causes of anemia in rheumatoid arthritis

- Anemia of chronic disease (most common cause) (normocytic normochromic)
- NSAID induced GIT hemorrhage (hypocytic, hypochromic)
- B12-deficiency anemia
- Autoimmune hemolytic anemia
- Bone marrow hypoplasia due to DMARD therapy



Question 115 of 122

Mr. X is complaining of progressive muscle weakness that mad troubles in going up stairs and getting up out of a chair for 6 months. He also reported swallowing difficulty especially to solid food for 4 weeks.

Examination shows proximal weakness of the shoulder and pelvic muscles with sparing of distal muscle power. Investigations show:

Hemoglobin	9 g/dL	(13.5-17.5 g/dL)
Serum creatinine	98 mmol/L	(53-106 mmol/L)
Serum creatine kinase	1250 U/L	(25-90 U/L)
Leukocyte count	8 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	266 K/mm3	(150-450 K/mm3)
ESR	110 1st hour	
ANA	positive	
RF	positive	

What is the most likely diagnosis?

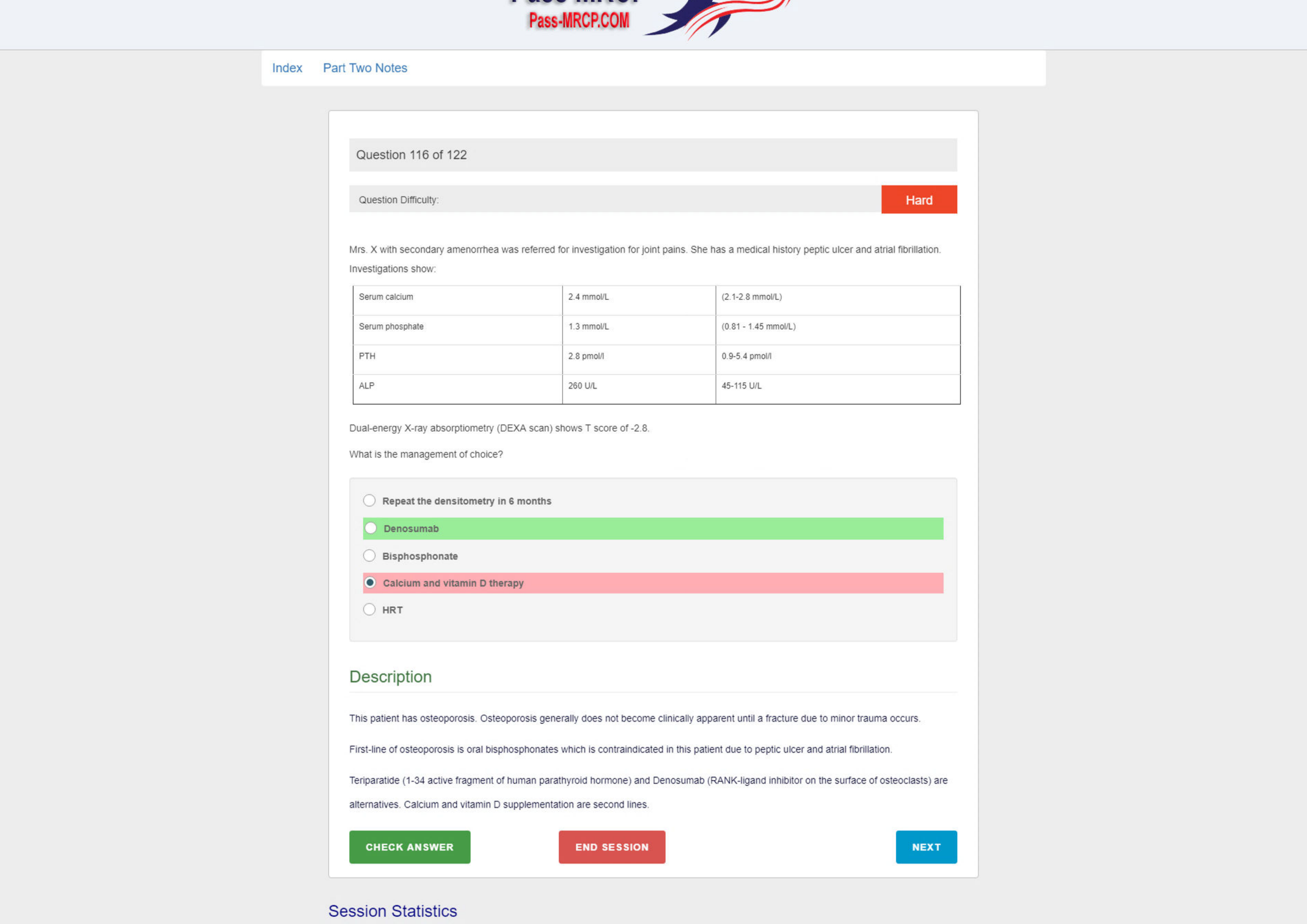
○ **SLE**
○ **Sjogren syndrome**
● **Rheumatoid arthritis**
○ **Mixed connective tissue disease**
○ **Polymyositis**

Description

Polymyositis is an idiopathic inflammatory myopathy. It is manifested by:

- No pathognomonic cutaneous features of Heliotrope rash and Gottron papules of Dermatomyositis
- Proximal muscle weakness and tenderness
- Raynaud phenomenon
- Dysphagia and dysphonia
- Tachyarrhythmia
- Interstitial lung disease
- Elevated creatine kinase

Polymyalgia rheumatica is associated with muscle tenderness but not weakness



Question 116 of 122

Question Difficulty: Hard

Mrs. X with secondary amenorrhea was referred for investigation for joint pains. She has a medical history peptic ulcer and atrial fibrillation. Investigations show:

Serum calcium	2.4 mmol/L	(2.1-2.8 mmol/L)
Serum phosphate	1.3 mmol/L	(0.81 - 1.45 mmol/L)
PTH	2.8 pmol/l	0.9-5.4 pmol/l
ALP	260 U/L	45-115 U/L

Dual-energy X-ray absorptiometry (DEXA scan) shows T score of -2.8.

What is the management of choice?

- ○ **Repeat the densitometry in 6 months**
- ○ **Denosumab**
- ○ **Bisphosphonate**
- ● **Calcium and vitamin D therapy**
- ○ **HRT**

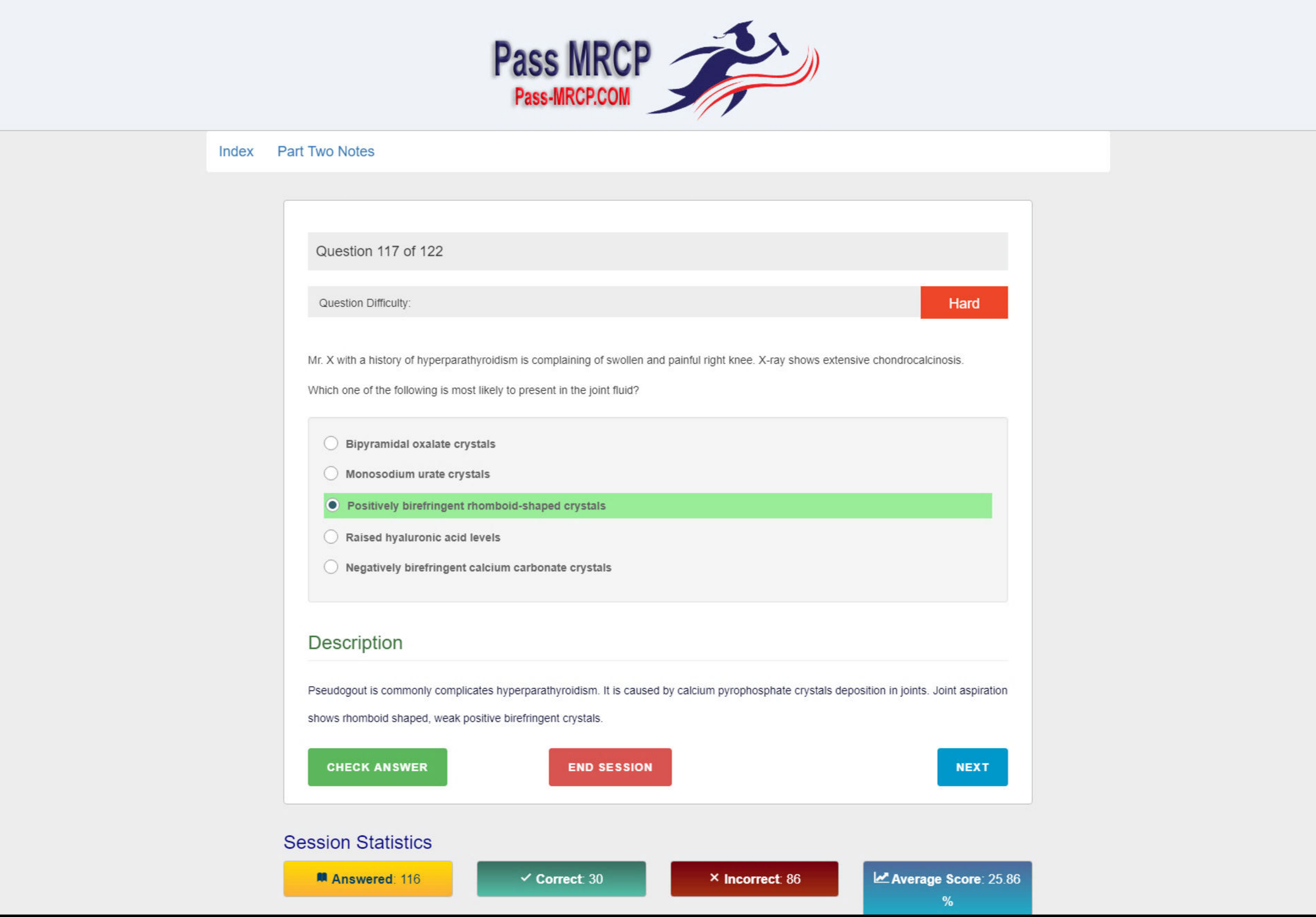
Description

This patient has osteoporosis. Osteoporosis generally does not become clinically apparent until a fracture due to minor trauma occurs.

First-line of osteoporosis is oral bisphosphonates which is contraindicated in this patient due to peptic ulcer and atrial fibrillation.

Teriparatide (1-34 active fragment of human parathyroid hormone) and Denosumab (RANK-ligand inhibitor on the surface of osteoclasts) are alternatives. Calcium and vitamin D supplementation are second lines.

Session Statistics



Question 117 of 122

Question Difficulty: **Hard**

Mr. X with a history of hyperparathyroidism is complaining of swollen and painful right knee. X-ray shows extensive chondrocalcinosis.

Which one of the following is most likely to present in the joint fluid?

- ○ **Bipyramidal oxalate crystals**
- ○ **Monosodium urate crystals**
- ● **Positively birefringent rhomboid-shaped crystals**
- ○ **Raised hyaluronic acid levels**
- ○ **Negatively birefringent calcium carbonate crystals**

Description

Pseudogout is commonly complicates hyperparathyroidism. It is caused by calcium pyrophosphate crystals deposition in joints. Joint aspiration shows rhomboid shaped, weak positive birefringent crystals.

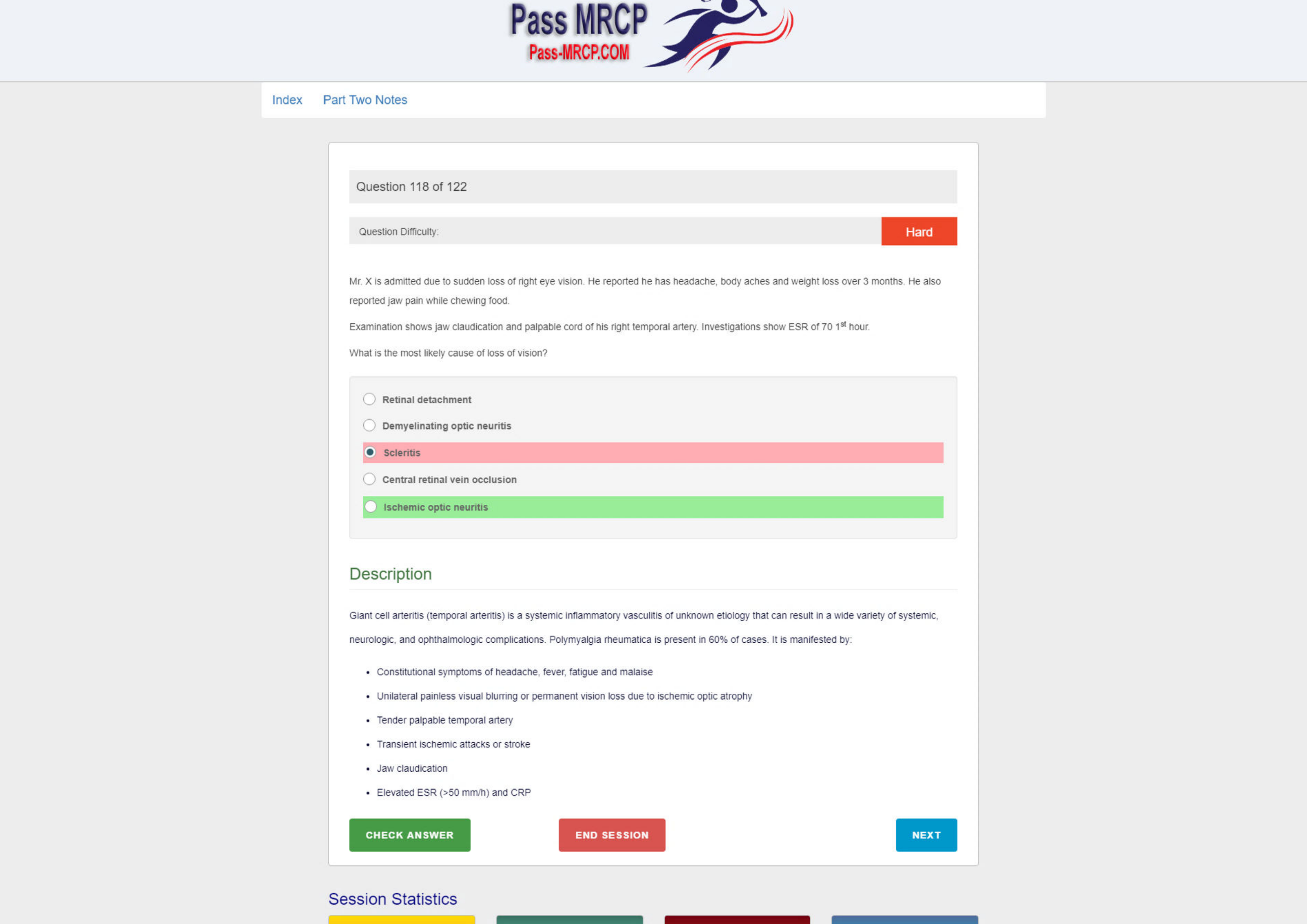
Session Statistics

Answered: 116

✓ **Correct**: 30

✕ **Incorrect**: 86

Average Score: 25.86 %



Question 118 of 122

Question Difficulty: Hard

Mr. X is admitted due to sudden loss of right eye vision. He reported he has headache, body aches and weight loss over 3 months. He also reported jaw pain while chewing food.

Examination shows jaw claudication and palpable cord of his right temporal artery. Investigations show ESR of 70 1st hour.

What is the most likely cause of loss of vision?

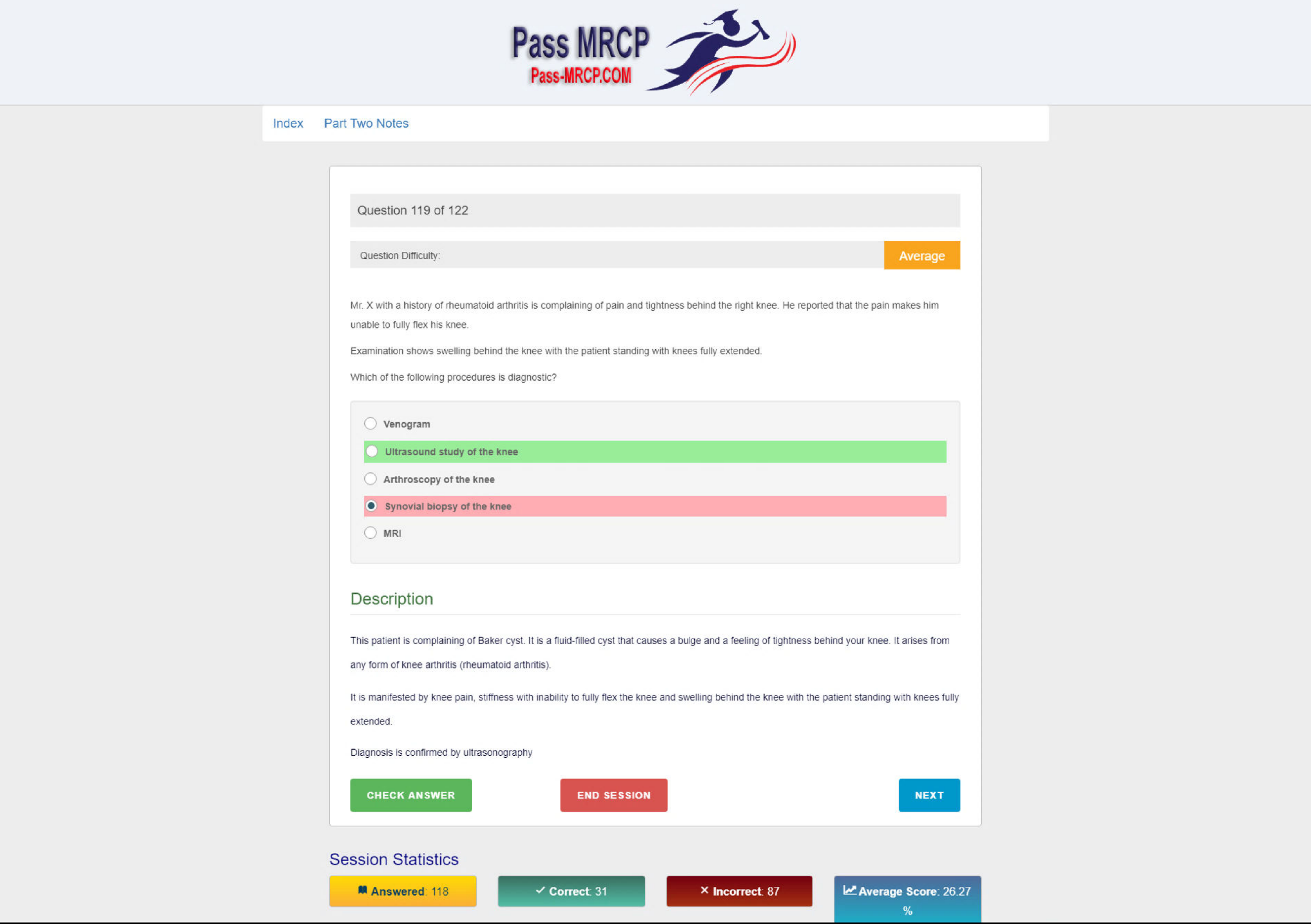
○ Retinal detachment
○ Demyelinating optic neuritis
● Scleritis
○ Central retinal vein occlusion
○ Ischemic optic neuritis

Description

Giant cell arteritis (temporal arteritis) is a systemic inflammatory vasculitis of unknown etiology that can result in a wide variety of systemic, neurologic, and ophthalmologic complications. Polymyalgia rheumatica is present in 60% of cases. It is manifested by:

- Constitutional symptoms of headache, fever, fatigue and malaise
- Unilateral painless visual blurring or permanent vision loss due to ischemic optic atrophy
- Tender palpable temporal artery
- Transient ischemic attacks or stroke
- Jaw claudication
- Elevated ESR (>50 mm/h) and CRP

Session Statistics



Question 119 of 122

Question Difficulty: Average

Mr. X with a history of rheumatoid arthritis is complaining of pain and tightness behind the right knee. He reported that the pain makes him unable to fully flex his knee.

Examination shows swelling behind the knee with the patient standing with knees fully extended.

Which of the following procedures is diagnostic?

- ○ **Venogram**
- ○ **Ultrasound study of the knee**
- ○ **Arthroscopy of the knee**
- ● **Synovial biopsy of the knee**
- ○ **MRI**

Description

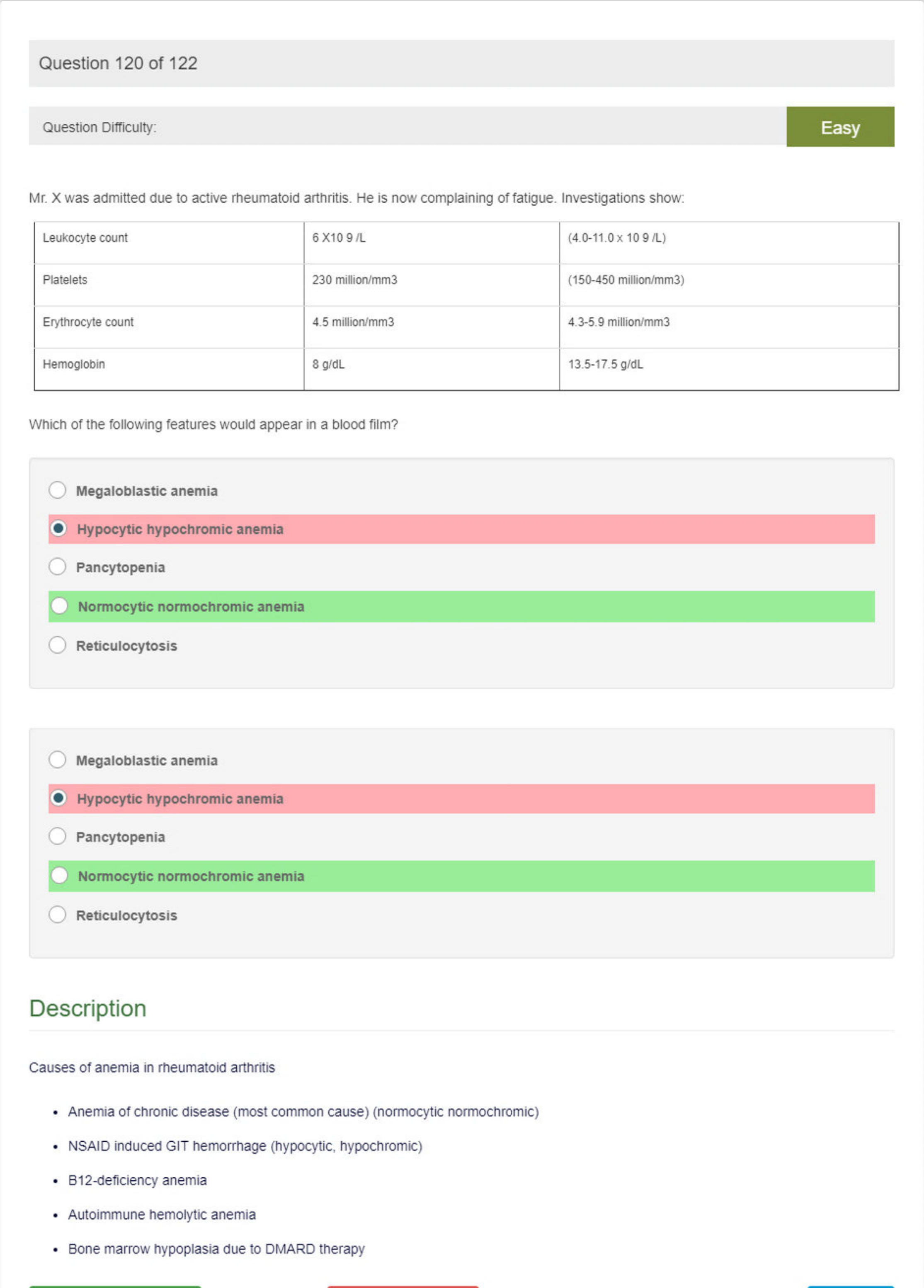
This patient is complaining of Baker cyst. It is a fluid-filled cyst that causes a bulge and a feeling of tightness behind your knee. It arises from any form of knee arthritis (rheumatoid arthritis).

It is manifested by knee pain, stiffness with inability to fully flex the knee and swelling behind the knee with the patient standing with knees fully extended.

Diagnosis is confirmed by ultrasonography

Session Statistics

Answered: 118
✓ **Correct**: 31
✕ **Incorrect**: 87
Average Score: 26.27 %



Question 120 of 122

Question Difficulty: **Easy**

Mr. X was admitted due to active rheumatoid arthritis. He is now complaining of fatigue. Investigations show:

Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	230 million/mm3	(150-450 million/mm3)
Erythrocyte count	4.5 million/mm3	4.3-5.9 million/mm3
Hemoglobin	8 g/dL	13.5-17.5 g/dL

Which of the following features would appear in a blood film?

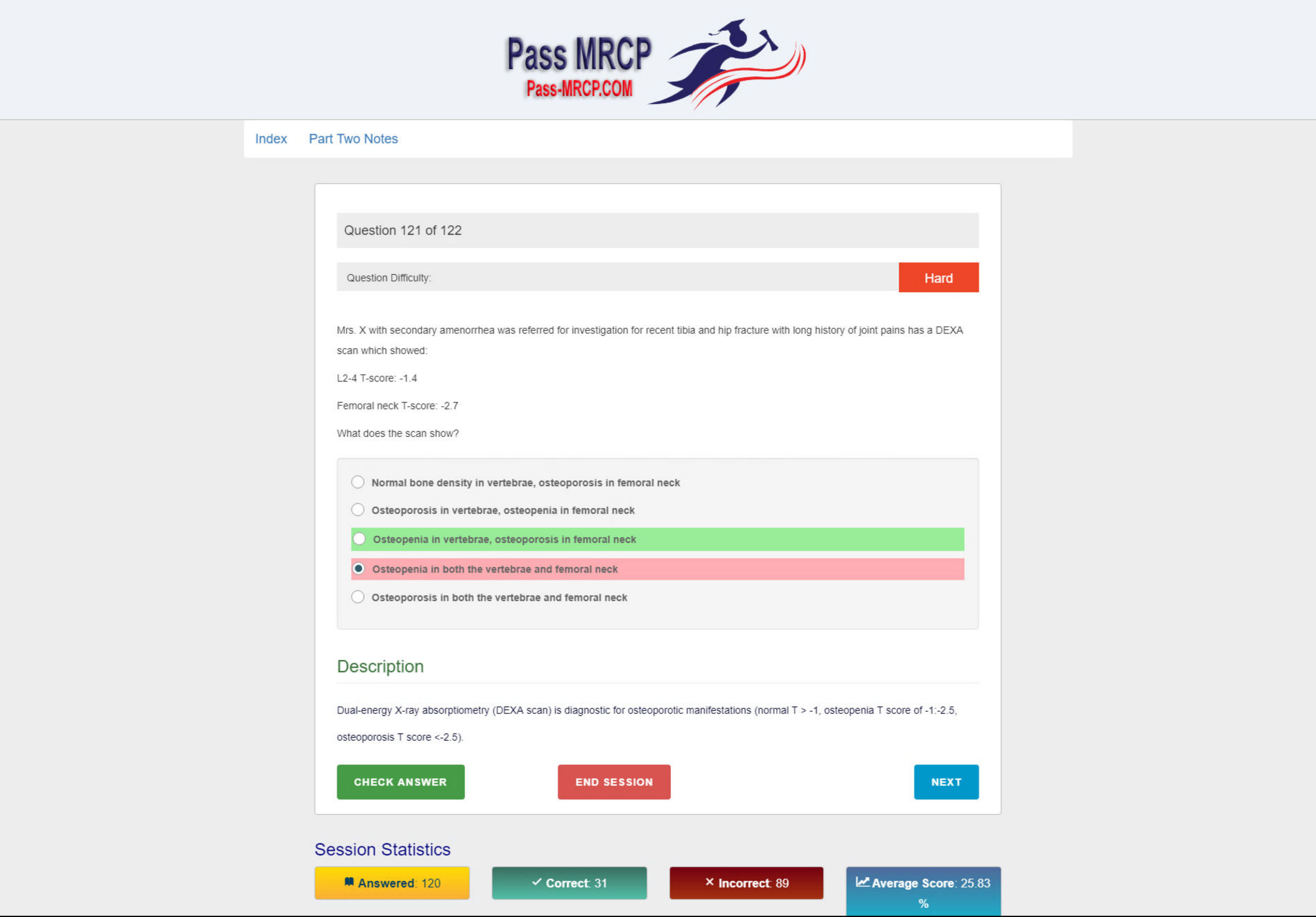
○ **Megaloblastic anemia**
● **Hypocytic hypochromic anemia**
○ **Pancytopenia**
○ **Normocytic normochromic anemia**
○ **Reticulocytosis**

○ **Megaloblastic anemia**
● **Hypocytic hypochromic anemia**
○ **Pancytopenia**
○ **Normocytic normochromic anemia**
○ **Reticulocytosis**

Description

Causes of anemia in rheumatoid arthritis

- Anemia of chronic disease (most common cause) (normocytic normochromic)
- NSAID induced GIT hemorrhage (hypocytic, hypochromic)
- B12-deficiency anemia
- Autoimmune hemolytic anemia
- Bone marrow hypoplasia due to DMARD therapy



Question 121 of 122

Question Difficulty: **Hard**

Mrs. X with secondary amenorrhea was referred for investigation for recent tibia and hip fracture with long history of joint pains has a DEXA scan which showed:

L2-4 T-score: -1.4

Femoral neck T-score: -2.7

What does the scan show?

- ○ **Normal bone density in vertebrae, osteoporosis in femoral neck**
- ○ **Osteoporosis in vertebrae, osteopenia in femoral neck**
- ○ **Osteopenia in vertebrae, osteoporosis in femoral neck** 🟩
- ● **Osteopenia in both the vertebrae and femoral neck** 🟥
- ○ **Osteoporosis in both the vertebrae and femoral neck**

Description

Dual-energy X-ray absorptiometry (DEXA scan) is diagnostic for osteoporotic manifestations (normal T > -1, osteopenia T score of -1:-2.5, osteoporosis T score <-2.5).

Session Statistics

Answered: 120
Correct: 31
Incorrect: 89
Average Score: 25.83 %

Question 122 of 122

Question Difficulty: **Hard**

8 years old boy is complaining of fever and hip and knee joint pains for 3 weeks. His mother reported that the fever rises 2 times daily and lasts 1 hour each episode.

Examination shows salmon colored rash on the trunk and extremities. There are enlarged cervical lymph nodes and hepatomegaly.

Investigations show:

Leukocyte count	6 X10 9 /L	(4.0-11.0 x 10 9 /L)
Platelets	230 million/mm3	(150-450 million/mm3)
Erythrocyte count	4.5 million/mm3	4.3-5.9 million/mm3
Hemoglobin	8 g/dL	13.5-17.5 g/dL
Rheumatoid factor	Negative	
ANA	Negative	
ESR	88 1st hour	< 10 1st hour

CXR shows interstitial fibrosis.

What is the most likely diagnosis?

○ **Hepatitis C infection**

○ **Infectious mononucleosis**

○ **Rheumatoid arthritis**

○ **Juvenile idiopathic arthritis**

● **Henoch-Schonlein purpura**

Description

Still disease can refer to:

- Juvenile idiopathic arthritis is the most common chronic rheumatologic disease in children. It affects boys and girls equally till the age of five years of age, beyond that girls are more commonly affected.
- Adult-onset Still disease is a rare disease typically affects 15-35 years old.

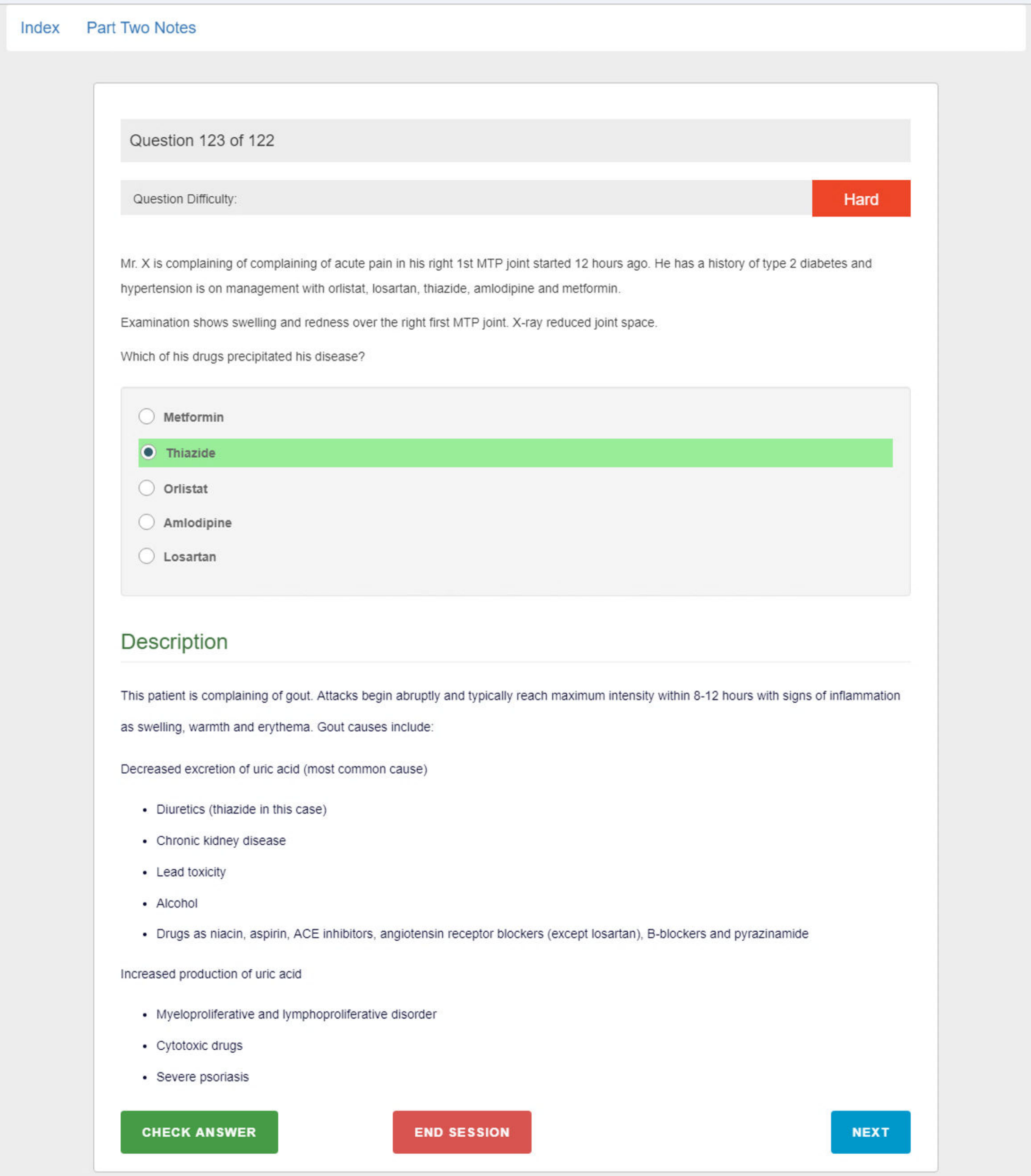
Still disease is manifested by:

- Spiking fevers, typically occurring once or twice each day
- Polyarthralgia
- Non-pruritic, macular and salmon colored rash on the trunk and extremities
- Pericarditis
- Interstitial lung disease and pleuritis
- Lymphadenopathy
- Hepatosplenomegaly
- Elevated serum ESR, CRP and ferritin
- All autoantibodies are negative

CHECK ANSWER END SESSION NEXT

Session Statistics

Answered: 121 ✓ **Correct**: 31 ✕ **Incorrect**: 90 **Average Score**: 25.62 %



Question 123 of 122

Question Difficulty: Hard

Mr. X is complaining of complaining of acute pain in his right 1st MTP joint started 12 hours ago. He has a history of type 2 diabetes and hypertension is on management with orlistat, losartan, thiazide, amlodipine and metformin.

Examination shows swelling and redness over the right first MTP joint. X-ray reduced joint space.

Which of his drugs precipitated his disease?

○ **Metformin**
● **Thiazide**
○ **Orlistat**
○ **Amlodipine**
○ **Losartan**

Description

This patient is complaining of gout. Attacks begin abruptly and typically reach maximum intensity within 8-12 hours with signs of inflammation as swelling, warmth and erythema. Gout causes include:

Decreased excretion of uric acid (most common cause)

- Diuretics (thiazide in this case)
- Chronic kidney disease
- Lead toxicity
- Alcohol
- Drugs as niacin, aspirin, ACE inhibitors, angiotensin receptor blockers (except losartan), B-blockers and pyrazinamide

Increased production of uric acid

- Myeloproliferative and lymphoproliferative disorder
- Cytotoxic drugs
- Severe psoriasis